



From muddy hands and dirty faces...
to higher grades and happy places

Transforming outdoor learning and play at schools in Australia
and around the world.

Cath Prisk and Dr Harry Cusworth

*‘Happy hearts and happy faces
Happy play in grassy places –
That was how, in ancient ages,
Children grew to kings and sages.’*

Robert Louis Stevenson, A Child’s Garden of Verses, 1888

This review looks at how much time children in Australia and around the world spend playing and learning outside as part of the school day. It includes a summary of the wide-ranging literature about why outdoor learning and play are important and an overview of the impact of the Outdoor Classroom Day movement.

The review has been funded by the Omo/Dirt is Good team in Australia, with support from Unilever’s Dirt is Good Global team, as part of their support for Outdoor Classroom Day in Australia and worldwide. The views expressed in this review do not necessarily reflect that of the funders. Find out more about Omo’s purpose, ‘Dirt is Good’, by visiting: <https://www.omo.com/au/dirt-is-good.html>

Sign up and find out more about Outdoor Classroom Day Australia by visiting: <https://outdoorclassroomday.com.au/>

Foreword

Childhood, play, education and the gradual disappearance of time outdoors

Our childhood memories are made of play and discovery outdoors. They are the bursts of colour that catch our eye as we look backward; the moments of movement that stitch together the narrative of our childhoods.

That time outdoors playing and learning is critical to a happy and healthy childhood is something we all feel, if not know. It's so much a part of most adults' experience of childhood it risks becoming a wallpaper-truth – so obvious, we forget it's there.

But the time has come to remind ourselves of just how important it is. We need reminding because the world of childhood, of families, of schools and of communities is changing so fast that outdoor learning and play risks being relegated to nostalgia.

And that would be a terrible loss.

Outdoor Classroom Day is part of the global movement to remember, and to act; to make sure our kids get outside more. It isn't a revolution. There are no big scary ideas here. It isn't about digging deeper into the wellspring of parental guilt or loading yet more expectation on teachers.

It is a campaign of common sense and fun. It doesn't focus on what is wrong in the world. Yes, we face challenges in health, environment, politics, and more. But the movement to connect children with the outdoors is about identifying what is right for kids and finding ways to give them more of it.

It is about gifting that great human inheritance of an outdoor childhood to new generations. At its core is the simple and deliberate act of prioritising outdoor play and learning in this ever more complicated world. To do that, we need to recognise and cast aside some false divisions.

The first is the false division between learning and play. They are not opposites. Treating them as though they are does a disservice to children. Albert Einstein said play is the deepest form of research (and he turned out alright).

Learning and play are part of the same process and continuum of discovery, of testing, of forming connections and inventing. The best outcome for our kids is time and space for playful learning and meaningful play.

The second false division is between nature and humanity. We are not only surrounded by nature, we are part of it. We suffer by nature's absence as we suffer by the absence of family. The good news is that nature is everywhere, we just need to choose to find it.

It should be no surprise that being in the outdoors is good for kids. The survival of our species has depended on being attuned to the world around us for millennia. We have evolved to be at our best outdoors. The sensory-rich nature of the outdoors reduces stress, increases our attention, and promotes co-operation.

Is it a coincidence that Isaac Newton discovered gravity under an apple tree? That Darwin developed his theory of evolution in the field? Or that so many of our religious traditions have evolved from contemplation of the divine in the outdoors?

In this document, created by Cath Prisk of the UK not-for-profit Project Dirt, you will find research compiled and referenced in sections to build the case for outdoor learning and play. It is an important piece of work, standing on the shoulders of writers and researchers from around the world, that pulls together some of the many reasons that outdoor learning and play are too fundamentally important to be lost to childhood.

Like the best research, it reflects our lived experience. I know time outdoors playing and learning shaped me, for one. I spent countless hours mucking around with my brothers among the tea-trees and the caves at the base of the Roundhouse- a colonial-era jail in Fremantle. We fished, swam, rode bikes, climbed roofs and made up worlds.

As a dad, I raised my daughters with the beach, the backyard, the neighbourhood and camping trips as mainstays. As a journalist, the cultural shift from outdoor childhoods to something more akin to protective house arrest became the subject of countless columns. And now as the CEO of Nature Play, an organisation dedicated to increasing children's time outdoors, I see the great impact the outdoors can have on kids from all walks of life.

The good news is that the global movement to get kids playing and learning outdoors more is growing at an astonishing rate. Last year more than 2 million kids worldwide, including more than 200,000 in Australia, took part in Outdoor Classroom Day. That is an extraordinary number – and it's growing.

We know from the survey of schools that took part in Outdoor Classroom Day 2017 – the biggest survey of its kind to date – that 99% of Australian teachers¹ believe children need playtime outdoors throughout the day to reach their full potential, identifying outdoors time, both playing and learning as helping with concentration, social skills, imagination, creativity and overall happiness.

We also know from the same survey that 85% of teachers want to take their classes outside more often. The research in this review should help them do that. For the rest of us, this review is full of yet more reasons to support our schools in those efforts, and for us to prioritise outdoor learning and play in our family and community life.

Griffin Longley

*CEO Nature Play Australia
Lead NGO for the Australia Campaign*

¹ 97% worldwide

The Outdoor Classroom Day Movement

Building a community to help children get outdoors more

‘Too many of London’s children have little or no meaningful contact with natural places in the city. As a result, they may be denied the many and varied benefits that experiences in nature bring: experiences that many adults understand at a deep emotional level from their own childhood memories.’

Tim Gill, Sowing the Seeds report for the London Sustainable Development Commission, 2011

In 2011, London’s Sustainable Development Commission asked Tim Gill, an expert in childhood, to produce a report on how best to reconnect children with nature, in order to grow the next generation of environmentally-conscious young people.

Sowing the Seeds offered a depressing analysis. Across the UK, 1 in 10 children rarely or never went to a green space – a park, woods or beach – and in London this was less than 1 in 7². In a similar study in Australia, Planet Ark reported that 72% of adults surveyed played outside every day as children, compared to only 35% of their children, and that 1 in 10 Australian children today play outside once a week or less³. Two thirds of Australian parents said they liked climbing trees as children; only 19% of Australian children climb trees today.

Anna Portch, an environmental educator, was in the audience at the launch of *Sowing the Seeds*. She was particularly struck by the finding that possibly as few as 4% of London’s 1.1million children under the age of 12 were being ‘engaged in nature’ through their schools. Enlisting the help of other nature-based organisations, Anna started a campaign to encourage schools to celebrate how they connect children to the outdoors and to inspire other schools to have a go.

The campaign started small, just a few schools in South London, celebrating what was then called ‘Empty Classroom Day’. By 2015, over 600 schools in 15 countries were involved. The following year, Project Dirt, one of the founding organisations, partnered with Unilever’s Dirt is Good team to grow the campaign. The campaign became ‘Outdoor Classroom Day’ and in 2017 Project Dirt joined forces with Nature Play to bring the movement to Australia.

Outdoor Classroom Day is a global movement to inspire and celebrate outdoor learning and play. The movement has two campaign days, one in May and one in November, so schools in different countries can participate on a day that suits their climate and fits with their term times. In Australia, the focus is on the November date.

On Outdoor Classroom Day thousands of schools around the world take lessons outside and prioritise playtime. As well as being a lot of fun, it shows teachers and parents how easy it is to give children more time outdoors.

The campaign days raise awareness about the importance of playing and learning outdoors, highlighting the benefits it brings to children, families and whole communities. They aim to show that longer and more enriching playtime at school is as important as healthy food. They act as a catalyst to inspire more time outdoors every day, both at school and at home.

From the Outdoor Classroom Day 2017 survey of teachers who have taken part in the campaign, it is evident that the campaign is already making some headway to achieving its longer-term goals. Over one fifth (22%) of respondents to the survey worldwide said they have increased playtime since getting involved; and more than two fifths (44%) said they have increased the frequency of outdoor learning. Thousands of schools are involving parents and volunteers from their communities – and that spreads the messages that outdoors is an essential part of every day even further.

Almost every teacher surveyed – 97% globally – said that time to play outdoors is critical for children to reach their full potential.

With the increasing pressures on our time from all angles, it’s vital that we allow children the space to experiment, understand the world around them, and express themselves. Access to the outdoors helps our youngest generations to develop into creative, healthy and socially responsible adults... who in turn will become active participants in the development of healthy and productive societies across local communities everywhere.

There are tens of thousands of teachers, playworkers, youth workers and environmental educators across the world already showing how getting outdoors every day makes a huge difference to the lives of the children. Outdoor Classroom Day gives them a community where they can join together, share what works and encourage others to have a go.

Project Dirt has been proud to be a part of this campaign from the outset, and I hope this review will help the movement build so that getting outdoors at school becomes part of the new normal.

Nick Gardner

*Co-founder & CEO Project Dirt
Global Lead Organisation Outdoor Classroom Day*

² Gill (2011)

³ 3Planet Ark, (2011); Planet Ark, (2017)



‘Teachers now know that all things we are doing indoors, we can do outdoors as well, the difference is that children love to be outdoors, they like to learn, to experiment to play outdoors’

Teacher, Outdoor Classroom Day Survey 2017



Contents

Executive summary	8
Introduction: about this review	12
What we mean by outdoor play, playful learning, and learning outdoors	12
1 A snapshot of outdoor learning and play: findings from the Outdoor Classroom 2017 survey	15
1.1 Time for play – breaks, playtime and recess.....	15
1.2 Frequency of outdoor learning: primary schools	16
1.3 What stops children going outside at school every day?	17
1.4 Nothing keeps one in five Australian schools indoors.....	19
1.5 Building key skills for school, for childhood and for life	19
1.6 Getting outdoors creates a better connection to nature and place	20
1.7 Getting outdoors is good for teachers too.....	20
1.8 Why is outdoor learning and play valued in some schools and not all schools?	20
2 Why outdoor learning and play should be part of every school day.....	23
2.1 Children are getting outdoors less	23
2.2 Getting outdoors to learn and play improves educational outcomes	24
2.3 Getting outdoors to learn and play is essential for physical health	27
2.4 Getting outdoors is a key part of good mental health	28
2.5 Getting outdoors connects us to place and the environment	29
2.6 Getting outdoors makes us happy	30
3 Schools as influencers: making outdoor learning and play part of every child's life	33
4 Bibliography	34
5 Appendices	41
5.1 Methodology	41
5.2 Full tables of responses from the Outdoor Classroom Day 2017 survey	42
5.3 Summary of the known consequences of taking learning and play outdoors	45
5.4 Acknowledgements	46
5.5 Authors	46
5.6 Outdoor Classroom Day Australia led by Nature Play Australia	46

Executive Summary

Outdoor Classroom Day movement goals

Outdoor learning part of every school day. Outdoor learning is part of every school day for every child.

A consistent minimum target for recess/playtime. Every child has great recess/playtime at school every day for at least 60 minutes, with the longer-term aim of 90 minutes.

Schools to advocate for more time outdoors. Schools act as advocates for more time outdoors, so that outdoor play becomes part of every child's everyday life.

Outdoor Classroom Day is a global movement to inspire and celebrate outdoor learning and play. It was created to raise awareness about the importance of playing and learning outdoors, highlighting the benefits it brings to children, families and whole communities.

In this review, we set out the goals, impact and evidence base for the campaign and the wider case for getting outdoors 'every day and often'. Australian schools already lead the way in the amount of time that children spend outdoors, but it's still far less than we would like them to have. Outdoor Classroom Day is gathering a community of schools stretching across our country and around the world who are looking to redress this balance.

The first part of the review summarises findings from the Outdoor Classroom Day 2017 survey, which set out to collect data on the amount of time children spend playing and learning outdoors as part of the school day. The second part presents an overview of the wide-ranging literature about outdoor learning and play, highlighting why it is important. In the concluding section we discuss how schools can act as catalysts in their communities to help increase opportunities for children to play when outside of the school gates. The intention is to make the case for more time to be spent outdoors on a daily basis, as a recommended prescription for all children both at school and beyond⁴.

The Outdoor Classroom Day goals support the World Health Organisation's guidance on time needed per day for physical activity⁵, the Sustainable Development Goals⁶ and the UN Convention on the Rights of the Child (UNCRC)⁷, which expects States to ensure children connect to nature, have access to good quality schooling, and have time to play.

The campaign started in the UK in 2011, with just a few schools from Australia joining in from 2014. In 2017 Nature Play took the lead, with support from Omo, and have since made Outdoor Classroom Day a truly Australian movement.

We are now seeing more playtime and more outdoor learning in the schools involved. Survey results showed that:

- 22% of primary schools worldwide, and 18% in Australia, said they have increased playtime since taking part in Outdoor Classroom Day
- 33% of Australian schools (44% around the world) have increased the frequency of outdoor learning
- Over 70% of schools involved before 2016 have now increased the frequency of outdoor learning.

More schools are joining every day, more parents are supporting the campaign, encouraging their schools to get involved. More NGOs, businesses and politicians are showing their support too. This is just about common sense: kids need to get outdoors often.

Part 1: A snapshot of outdoor learning and play at school in Australia and beyond

The Outdoor Classroom Day 2017 survey⁸ asked teachers about their experience of taking lessons outdoors and the availability of opportunities for outdoor play within their school, that is, free-time outdoors where children can enjoy self-directed activities, for example, during recess. We received sufficient responses to compare Australia with the UK, the US, Canada and the rest of the world. The survey highlighted some key features of Australian schools:

- Australian primary schools make the most time for play: 58% have more than 1 hour per day.
- 72% of Australian teachers said they take lessons outdoors at least once a week, more than any other country represented in the survey.
- Almost all (97% or more) Australian teachers think playing outdoors develops key skills for life, including: social skills, imagination and creativity, ability to focus on a task, and fine motor skills.
- 92% of Australian teachers think playing outdoors helps children develop a better understanding of the environment.
- In addition, two thirds (65%) of Australian teachers think that by including time for outdoor play as part of the school day, children are better behaved.
- 84% think children who learn outdoors are more engaged in learning.
- Almost nine out ten teachers think children are happier when they learn outdoors and after playing outside.
- Despite our weather and the pressures of curriculum, more than one in five (21%) of Australian teachers say that nothing stops children having outdoor playtime, compared to just 6% of US schools.

However, despite the fact that outdoor learning and play are recognised as important in the Australian curriculum, and the

4 Yogman et al. (2018).

5 <http://www.who.int/mediacentre/factsheets/fs385/en/>

6 <https://sustainabledevelopment.un.org/sdgs>

7 <https://www.unicef.org/uk/what-we-do/un-convention-child-rights/>

8 Data collected from 713 teachers, (93 Australian) on learning outdoors and 629 teachers about outdoor play (91 Australian), from 44 countries.



Almost all (97% or more) Australian teachers think playing outdoors develops key skills for life.

survey targeted teachers already interested in the outdoors one in six (17%) of Australian teachers who responded take lessons outdoors less than once a month. Moreover, the data show there are big differences between schools regarding what is offered.

Although Australia leads the world on time to play at school, there is much to be done to ensure every Australian child gets outdoors for lessons and playtime every day.

Part 2: Why outdoor learning and play should be part of every school day

The literature reviewed shows that outdoor learning and play has a huge range of benefits for children. Being out in fresh air, whatever the weather, has been shown to improve mood, reduce stress, improve eyesight and increase physical activity⁹. We have referenced a number of robust research studies which show that encouraging children to play freely can improve their educational outcomes¹⁰. The fun that comes from play is a crucial part of childhood, and is essential to health, wellbeing and learning.

Outdoor learning and play creates healthier kids, who can come to school more often, can concentrate better, physically sit at their desks for longer, can see better and can learn more¹¹. Active free play is also critical in helping children develop balance, co-ordination and improved motor fitness¹², and children who are outdoors in nearby spaces often love their environment and grow up wanting to protect it.¹³

Better learning, across the board

The Australian Curriculum¹⁴ recognises that outdoor learning can help kids in everything from leadership skills to developing an adventurous spirit. When it comes to what they learn, it's not just about better understanding of subjects such as science. Research shows that outdoor learning can create improvements across all academic disciplines¹⁵.

In the USA, a study of 40 schools showed that using natural surroundings as a context for learning – combined with best-practice education – had a positive effect for students learning a range of subjects, including social science, language, arts and maths. It also helped with problem-solving, enthusiasm for learning and even test scores and grade averages¹⁶.

In the revised Australian Curriculum¹⁷, it states that outdoor learning can be instrumental in:

- the teaching and learning of self-reliance, interdependence and leadership
- the development of an adventurous spirit
- managing personal risks
- experiencing safe journeys in nature
- learning the value of lifelong outdoor recreation for enjoyment, health and wellbeing
- understanding nature through direct experience; leading to deeper human- nature relationships.

However when Planet Ark asked Australian teachers about teaching outdoors, less than 34% said they taught outdoors

9 Gill, (2011) & (2014b); Children and Nature Network, (2018); Dowdell et al, (2011); Herrington & Brussoni (2015); Kellert (2013); Maller, C et al, (2006).

10 Sobel, D, (2004).

11 Langford et al, (2014), Brussoni et al, (2015); Robinson & Aronica, (2018); Strauss & Hanscom, (2014).

12 Fjørtoft (2004).

13 Louv, (2008); Gill, (2014a).

14 <https://www.australiancurriculum.edu.au/resources/curriculum-connections/portfolios/outdoor-learning/>

15 Sobel, (2004).

16 In Sobel, (2004) p36.

17 <https://www.australiancurriculum.edu.au/resources/curriculum-connections/portfolios/outdoor-learning/>

for 15 minutes or more in a 10-week term (excluding lunch, recess and physical education). Our survey of schools that have signed up to Outdoor Classroom Day – and are therefore presumably positive about outdoor learning – still had 17% going outdoors for lessons less than once a month. Some schools such as Upper Sturt Primary in South Australia are turning that around, showing that children can learn more and be happier by being outside almost all the time, all year round¹⁸.

Benefits that last beyond early education

A Norwegian study showed that pre-school children who enjoyed large amounts of outdoor time consistently scored better on standardised tests for executive function, attention and short-term memory compared to children who attended pre-schools with fewer outdoor hours.

The study also showed that even after the children started at primary school, those who had more outdoors time during pre-school continued to score better on standardised testing¹⁹. A five-year survey conducted by Natural England across 125 primary schools²⁰, the largest-ever trial run of an outdoor education programme, arrived at a similar conclusion.

A 2011 study by Kellie Dowdell, Tonia Gray and Karen Malone compared two kindergartens. Both offered good-quality childcare and education, but one allowed children more access to outdoors. The children who were outdoors and

had a richer, more ever-changing environment were more engaged with their activities, paid more attention and stayed on-task for longer. This mirrored outcomes of the Liink project in Texas, USA, which showed how increased recess can reduce fidgets and increase on-task behaviour²¹.

Outdoor play gets kids more active...

In one generation, children have reduced their physical activity rates in Australia and worldwide²². However, when engaged in play, children will stay active for long periods of time²³ and they're more active outdoors than indoors²⁴. A study by the Department of Health Services, University of Washington, found that children aged 6-11 were active for 41% of the time while engaged in outdoor free play as opposed to 18% of the time during indoor free play²⁵.

...and boosts mental health

Today's children have more recognised mental health problems than any previous generation. Study after study shows an increase in anxiety, self-harming and depression²⁶.

Children's lives today can be stressful: there are higher academic expectations, as well as intense peer pressure which is exerted almost 24/7 through social media.

18 Robertson (2018).

19 Ulset et al. (2017).

20 Waite et al. (2016).

21 Rhea & Rivchun, (2018).

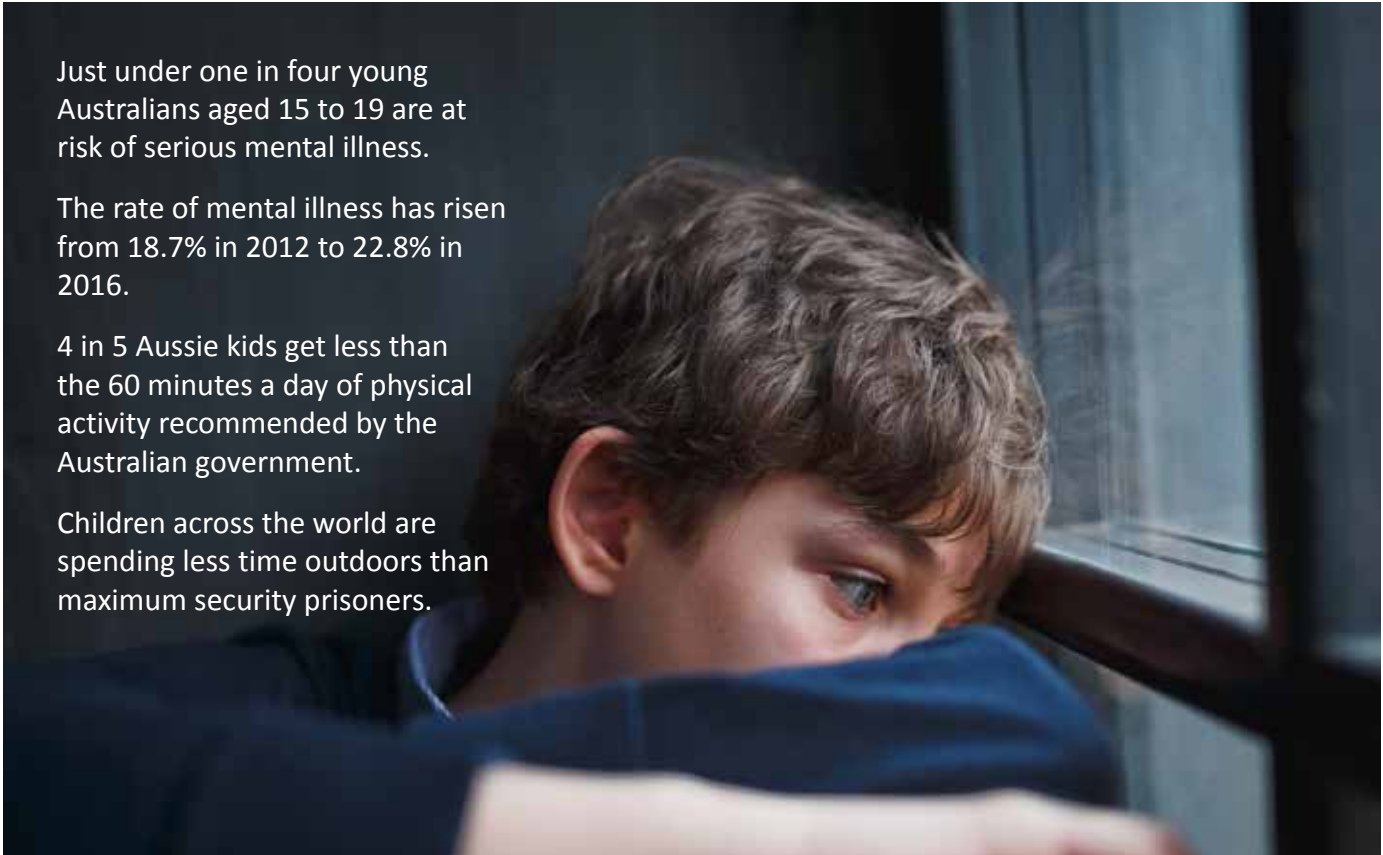
22 Active Healthy Kids Australia, (2016).

23 Active Healthy Kids Australia, (2016); Baines & Blatchford, (2011); Beresin, (2016); Centers for Disease Control and Prevention, (2010) .

24 Cooper et al, (2010).

25 Herrington & Brussoni, (2015).

26 Mission Australia & The Black Dog Institute, 2017.



Just under one in four young Australians aged 15 to 19 are at risk of serious mental illness.

The rate of mental illness has risen from 18.7% in 2012 to 22.8% in 2016.

4 in 5 Aussie kids get less than the 60 minutes a day of physical activity recommended by the Australian government.

Children across the world are spending less time outdoors than maximum security prisoners.

Just under one in four young Australians aged 15 to 19 are at risk of serious mental illness.²⁷

The rate of mental illness has risen from 18.7% in 2012 to 22.8% in 2016.²⁸

4 in 5 Australian kids get less than the 60 minutes a day of physical activity recommended by the Australian government.²⁹

Children across the world are spending less time outdoors than maximum security prisoners.³⁰

Meanwhile, research from around the world points to the ability of nature to restore our sense of wellbeing³¹.

In Australia, an Adelaide study showed that people living in green neighbourhoods rated their mental and physical wellbeing 1.37 to 1.60 times higher than those in neighbourhoods where there was less green space³². Principals and teachers in Melbourne have perceived the benefits to children's mental health and wellbeing through participation in hands-on nature-based activities at school³³. Students learn and perform best in environments that offer high challenge and low threat³⁴. As Stixrud and Johnson (2018) state: children feel better and perform better after they have been outdoors³⁵.

Getting outdoors connects us to the places we live and the environments we will want to protect

There is a wealth of literature to suggest that environmental stewardship and connection with place is strongly connected with the amount of time we are immersed in nature as children³⁶.

A 1999 study³⁷ of 1,259 students from nine countries, including Australia, found that direct experiences with nature had a bigger impact on subsequent development of pro-environmental behaviour compared to formal education – reflecting feedback from the Outdoor Classroom Day 2017 survey, where nine out of ten (92%) of Australian teachers reported that playing outdoors developed children's connection to the environment. This is supported by the outcomes of a study by Natural England³⁸, where 94% of the teachers involved reported that outdoor learning resulted in a greater understanding of nature among children.

27 Mission Australia & The Black Dog Institute, (2017).

28 Mission Australia & The Black Dog Institute, (2017) p5.

29 Active Healthy Kids Australia, (2016).

30 Robinson & Aronica (2018) quoting research conducted for Dirt is Good.

31 Williams, (2017).

32 Townsend & Weerasuriya, (2010).

33 Maller & Townsend, (2005) in Townsend & Weerasuriya, (2010).

34 Stixrud & Johnson, (2018).

35 *ibid*, p209

36 Louv, (2008); Dowdell, Gray & Malone (2011); Williams, (2017); Ballantyne & Packer, (2009).

37 Packer (1999) in Ballantyne & Packer, (2009).

38 Waite et al, (2016).

Tim Gill's 2014 literature review of the benefits of children's engagement with nature³⁹ found strong evidence of a range of benefits arising from children spending time in nature, both through learning ('less playful activities') and through playing ('more playful activities'). Uniquely, he compared outcomes as reported by the most robust studies which would seem to indicate that more playful interventions – free play or playful learning – are more likely to result in greater concern for the environment and connection to nature, while less playful interventions are arguably most effective for building scientific knowledge.

Schools as influencers: making outdoor learning and play part of every child's life

The Australian Government, alongside several others worldwide, has embedded learning outdoors and play in the national curriculum, but there is a lot to do to make this a reality in every school. The latest Planet Ark report⁴⁰ rightly says:

*'The more time you spend in nature and the more connected you feel to your community, the happier you are.'*⁴¹

They go on to report that 3 in 4 Australians say they are not spending enough time in nature.

In the UK a recent survey found that 35% of parents think that a day of outdoor play is just as important as a day at school⁴², and yet the Natural England's 'Monitoring Engagement with the Natural Environment' research shows that while 50% of visits to parks and green spaces are with dogs, less than 10% are with children⁴³.

Schools, by sending a clear message that getting outdoors is important to children's wellbeing and development, can help make outdoor learning and play part of every child's every day life.

Schools are extremely well placed to not only make use of the outdoors to improve engagement with learning, love of the environment and to develop healthier and happier kids in schools, but become beacons of good practice, highlighting the importance of getting outdoors to parents and the wider community.

Some schools are already leading the way. For those that want to offer more outdoor play and learning, there is plenty of support out there to just have a go.

It's now time for every school, every parent and every politician to back this move and make outdoors time – for learning and for play – just a normal part of every Australian child's day.

Get involved in Outdoor Classroom Day Australia and find out more by visiting: <https://outdoorclassroomday.com.au/>

39 Gill, (2014).

40 Planet Ark, (2018).

41 *Ibid* p7

42 Microsoft, (2018).

43 Hunt et al., (2016).

Introduction: about this review

This review explains why playing and learning outdoors is a critical part of the school day, not just an optional extra. It sets out why time outdoors should not be seen as an added burden, but as a space to improve outcomes: by making lessons more memorable, improving focus and concentration, reducing absenteeism and increasing creativity and imagination.

Australia is one of very few nations where outdoor learning is identified as part of the curriculum⁴⁴. It recognises that any topic, subject area and competence can be taught (or learned) outdoors. However, one in six (17%) of Australian schools involved in Outdoor Classroom Day told us they take lessons outdoors once a month or less.

Part One of this review presents the key findings from the Outdoor Classroom Day 2017 survey, with a focus on how practice in Australia compares to the rest of the world.

Part Two shines a light on why outdoor play and learning should be a critical part of every school day. The focus here is on schools: because that's where children spend a large amount of their time, and is also where most of the research is done. This review does not cover literature about children with additional needs in any depth, but much of the research emphasises that great outdoor play environments and green school yards can help schools meet all children's requirements.

Part Three focuses on opportunities for campaigners, teachers and experts. It sets out a framework for policy and cultural change so the Outdoor Classroom Day campaign goals can be achieved.

Even in countries where the outdoors is embedded in culture, for example Australia or Finland, children are being disconnected from the outdoors. Schools are extremely well placed to be beacons in their own communities, highlighting the importance of getting outdoors regularly.

Griffin Longley, CEO of Nature Play Australia, which is leading the consortium of organisations driving the campaign in Australia, says:

'We've found teachers have a pent-up appetite for finding curriculum-based reasons to get kids outdoors. They know we need to get outside to learn, they're just pressured with everything else they have to do.'

This review seeks to provide the foundation of evidence teachers need to show that time outdoors isn't just 'one more thing' to do. It's a solution that will make teachers' lives easier, schools better and children happier – as well as being plain common sense.

What we mean by outdoor play, playful learning, and learning outdoors

Outdoor learning, playful learning and outdoor play all have their place in a school day and are valuable in their own distinct way. This report seeks to tease apart the benefits of each, using the following definitions:

Outdoor learning refers to any adult-directed lessons that are held outdoors.

Playful learning is learning directed by an adult but where the child controls how they engage – the intention is that it should be fun, playful and experiential.

Play is directed by the child, is not constrained or directed by the adult and is a process engaged in for its own purpose.

Playtime refers to all break times throughout the school day.

The term 'outdoors' here refers to any outdoor space – playgrounds and sports fields as well as streets and parks. Parents and educators should not think that children have to go deep into the bush, up a mountain or to a National Park to connect with nature or enjoy playing. Frequently visiting a single outdoor space can build a sense of place ownership much more firmly than a once-a-year visit to the wilderness⁴⁵. And, while green features and increased wildness are beneficial in their own right, they are not essential to the outdoor experience.

This review does not focus on 'outdoor pursuits' such as hiking, canoeing or climbing, or off-site visits. As valuable as these bigger adventures are, the intention here is to make the case for more time to be spent outdoors on a daily basis, supporting 'every day and often' as a recommended prescription for all children both at school and beyond⁴⁶.

There is a wealth of research that shows the benefits of outdoor play. Simply being out in fresh air, whatever the weather, has been shown to improve mood, reduce stress, improve eyesight and increase physical activity⁴⁷. But, crucially, being outside supports children's agency and self-direction, providing a space where there is more to do, more incentive to physically move and more opportunities to develop games and activities that children can think up themselves and sustain⁴⁸.

⁴⁵ Williams, (2017).

⁴⁶ Yogman et al. (2018).

⁴⁷ Gill, (2011) & (2014a); Children and Nature Network, (2018); Dowdell et al (2011); Herrington & Brussoni, (2015); Kellert, (2013); Maller et al, (2006).

⁴⁸ Louv, (2012); McCree et al. (2018); Play Wales, (2015); Rhea, (2015); Kellock, (2015); Jarrett, (2013).

⁴⁴ <https://www.australiancurriculum.edu.au/resources/curriculum-connections/portfolios/outdoor-learning>

While we are not attempting to present a new theoretical framework for play⁴⁹, we do hope to accurately present the complexity of children's play, and in particular outdoor play.

Play as a process/activity/state is famously difficult to describe⁵⁰. Often viewed as the antithesis of 'work', it can be thought of as frivolous, a pastime, or even a waste of time. Arguably, some teachers – and administrators governing teachers' health and safety at work – see recess as, principally, the teacher's rest period, a space in the day to get a coffee and prepare for the next lesson. But playtime is – and should be – much more than that.

Through play children learn the skills they need for a good adulthood, as well as learning who they are in their own present. Through play, children 'co-construct' their own unique viewpoint of what the world is and could be. In this respect, every object and environmental element can shape what that viewpoint is. This applies to the tiniest baby learning to play peekaboo; the eight-year-old building a cubby house; or the seventeen-year-old trying out ever more outrageous festival outfits with her friends.

In *The Power of Play*, a paper by the American Academy of Pediatrics⁵¹ (AAP) play is referred to as something 'elusive', a feeling that echoes the work of Brian Sutton-Smith in his seminal text *The Ambiguity of Play*⁵². Nevertheless, the AAP arrives at a working definition, which covers most of the bases, in particular the intrinsic (internal personal) motivation of play:

'An activity that is intrinsically motivated, entails active engagement, and results in joyful discovery. Play is voluntary and often has no extrinsic goals; it is fun and often spontaneous.'

Against this, one of the simplest definitions of play was recorded by school playtime expert Michael Follett in the course of a consultation with children about their play. He recalled one child saying:

*'Play is what I do when you stop telling me what to do!'*⁵³

This definition fits with many children's understanding of play: an activity may be playful, it may be instructive, it may indeed serve a higher purpose, but if you tell me what to do, it is no longer play.

The AAP definition lacks a sense of the dangerous edge to play that is reflected in one of Sutton-Smith's famous quotes:

*'As they play, children rearrange their worlds to make them either less scary or less boring.'*⁵⁴

The late Stuart Lester, a highly respected English play academic, talked about the value of the 'nonsense, ordinariness and triviality of play', which is sure to strike a chord with anyone who has spent any amount of time observing children. In *Unfinished adults and defective*

children: On the nature and value of childhood, Gheaus⁵⁵ wrote about how children are uniquely fitted for childhood, with the drive to play hardwired in them. If adults were to replicate what children are doing in their play, they would find it extremely boring, which possibly explains why we so often trivialise it. Children's play is indeed occasionally trivial and ordinary – but so is making a cup of tea for a neighbour or remembering to take the recycling out. Out of those trivial everyday social interactions societal structures are formed. From what might seem to be endless repetitions of minute actions – putting a ball in a cup, jumping off a wall, cycling around their estate – a child weaves their sense of agency, their cultural foundations and their sense of place⁵⁶.

Outdoor learning is easier to define – more likely, although not necessarily, adult-led and often taking place in the context of formal or informal education. There is an inevitable blurring of the lines along the continuum of free 'real' play, Forest School⁵⁷ or 'Bush Kinder'⁵⁸ -style child-led explorations (where adults may frame the environments but not direct the activities); through to playful learning styles and hands-on, experiential teaching, and directive teaching that is taking place outdoors⁵⁹.

Within the school day there are many opportunities for child-led, intrinsically motivated 'real' play outdoors – principally through playtime, as well as manifold opportunities for learning outdoors. Capitalising on these opportunities need not impose any additional burden on teachers, and in fact (as many schools can demonstrate) can help children thrive and achieve more effectively.

55 Gheaus, (2015).

56 Lester & Russell (2008), (2010), (2014); Whitebread (2012); Yogman et al (2018); Griffiths, (2013).

57 Forest School is a pedagogy – teaching and learning methodology, originating in Europe, which is play-based and playful and takes place outdoors, usually for children aged 2-6, as a half-day to a full kindergarten program.

58 'Bush Kinder' or 'Bush Kindy' is a growing Australian version of forest school, again following a play-based child-centred program outdoors. See for instance Elliott and Chancellor, (2014).

59 Stixrud & Johnson (2018); Zosh et al, (2018); Lester & Russell, (2008); Smith, (2009).

49 References to theoretical perspectives are listed in the Appendices.

50 Sutton-Smith, (2009); Lester & Russell, (2008); Zosh et al, (2018).

51 Yogman et al, (2018).

52 Sutton-Smith, (2009).

53 Follett, (2017).

54 Sutton-Smith, (1999) in Lester & Russell, (2010).



1 A snapshot of outdoor learning and play

Findings from the Outdoor Classroom Day Survey 2017

‘Outdoor Classroom Day was the Best day EVER! ... Children loved being outside... they made cubbies, climbed trees, built teepees, moved logs, ran, fell over, picked themselves up... and went home happy.’

Teacher in Australia, Outdoor Classroom Day Survey

This section presents the findings from the Outdoor Classroom Day 2017 survey⁶⁰. This data was collated between November 2017 and April 2018 and brings together responses from 713 teachers (93 of whom were Australian) answering questions about outdoor learning, and 629 teachers (91 from Australia) answering questions about outdoor play. Globally, we received responses from 44 countries.

In all sections ‘global’ or ‘worldwide’ refers to the average data across the full data set, including Australia. Data from Australia, the UK, the US and Canada have been pulled out for comparison as these countries had over 90 respondents. Survey responses were further refined when looking at outdoor play to focus on responses from primary schools (57 of which were in Australia) to highlight the time that children aged 6 to 12 get outdoors (see Figure 1).

As far as we are aware, this is the first large-scale global survey of the length of time children spend outdoors while at school. As valuable as this set of data is, it is only a snapshot of current activity, as we can assume responses generally came from teachers and schools already predisposed to outdoor learning and play⁶¹. Nevertheless, this makes the

data particularly interesting, and at times worrying, as even in Australia – where most states formally recognise outdoor learning and break time as important – children are still by no means learning outdoors every day or playing outdoors for more than an hour.

1.1 Time for play – breaks, playtime and recess

Australian primary schools have the most play – 58% have more than 1 hour. No Australian schools in the survey had less than 30 minutes and 11% had more than 90 minutes.

99% of Australian teachers believe that time to play outdoors throughout the day is critical for children to reach their full potential.

Two thirds of primary schools globally (65%) get less than 1 hour of playtime a day; 12% get less than 30 minutes; 26% get 60 to 89 minutes; 9% get more than 90 minutes.

Primary schools in the US have the least play – 89% have less than 1 hour.

In the UK, 60% of primary schools have less than 1 hour and 8% have more than 90 minutes; in Canada, 66% have less than 1 hour and 10% have more than 90 minutes.

⁶⁰ The full methodology and tables are in the appendices. Surveys were carried out by Project Dirt for Outdoor Classroom Day, corresponding with all teachers who agreed to be contacted following involvement in Outdoor Classroom Day. Outdoor People analysed the data and an initial report was published on the Outdoor Classroom Day website on May 2018. This is a full report of the survey, focusing on Australia.

⁶¹ Responses came from teachers involved in Outdoor Classroom Day.

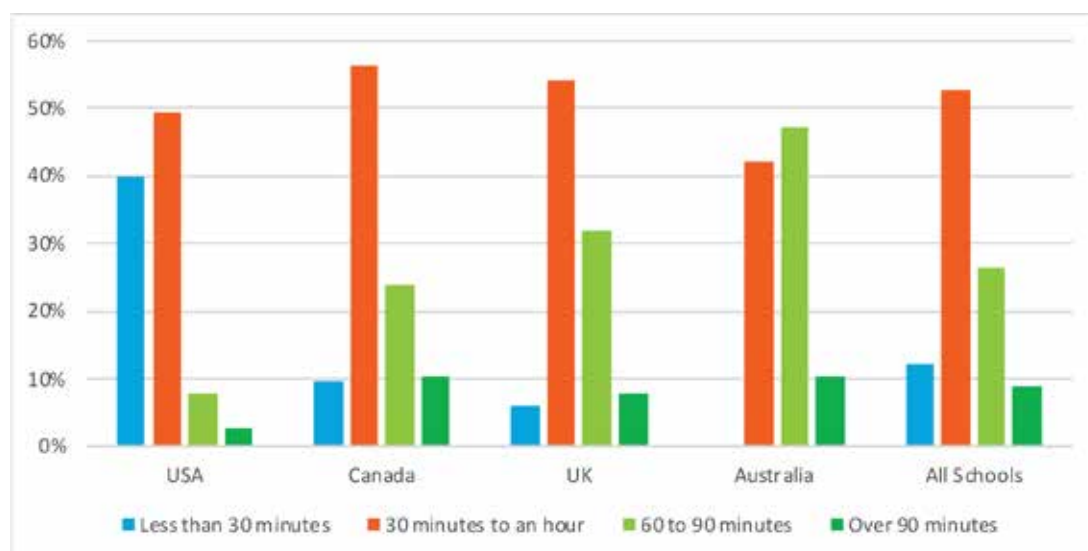


Fig. 1 Time for recess/playtime in primary (elementary) schools worldwide. These results exclude early years (0-6), secondary schools or colleges for children aged 16 and over. It includes ‘all-through’ schools.

An overwhelming 99% of Australian teachers believe that time to play outdoors throughout the school day is critical for children to reach their full potential. Around the world, 97% of teachers agree – with fairly consistent responses from Canada (99%); South Africa (96%); the UK (99%); and the US (99%).

It is striking that Australian teachers report the most amount of playtime at primary levels (children aged 6 to 12 years old), compared with the schools from the rest of the world, with 11% reporting more than 90 minutes of playtime a day. Over half (58%) have more than an hour, the recommended time for daily physical activity for this age group. This compares to 40% of UK primary schools and just 11% of elementary schools in the US.

The amount of time allocated to play – morning recess, breaks around lunchtime not including time to eat, and breaks in afternoon school – varies greatly across age ranges and continents, as well as within countries. The US, which has significantly less playtime than other countries surveyed at all ages, is the only country where secondary schools had no recess as a matter of course, and where almost half of all elementary (primary) schools (40%) had less than 30 minutes. Nine out of ten (89%) had less than an hour. By contrast no Australian primary schools recorded less than 30 minutes, although 42% have less than an hour.

The only other countries recording secondary schools with no break times were Brazil and Indonesia, but there was not enough data from these countries to make a broad judgement. Given this is a survey of schools already involved in Outdoor Classroom Day and therefore with an interest in allowing more time outdoors, we can infer that results in the wider population could be even lower.

1.2 Frequency of outdoor learning: primary schools

Almost three quarters (72%) of Australian teachers surveyed said they take lessons outdoors at least once a week; more than any other country in the survey. However, one in six (17%) take lessons outdoors less than once a month, in line with the worldwide average of 16% (see Figure 2).

Again, schools in the US allowed the least amount of time outdoors. Almost a third (29%) of elementary schools in the US have lessons outdoors less than once a month, by far the least worldwide. Canadian teachers reported the highest proportion of outdoor lessons, with almost a fifth (18%) taking lessons outdoors every day.

Further research needs to be done to understand both the quality of outdoor learning and the variation in quantity.

Perhaps unsurprisingly, more than nine out of ten (93%) schools in the US said they would like to take children outdoors more frequently. Here in Australia 85% of teachers surveyed said they want to take more lessons outdoors. It is notable that participation in Outdoor Classroom Day seems to have had an impact (see Figure 3).

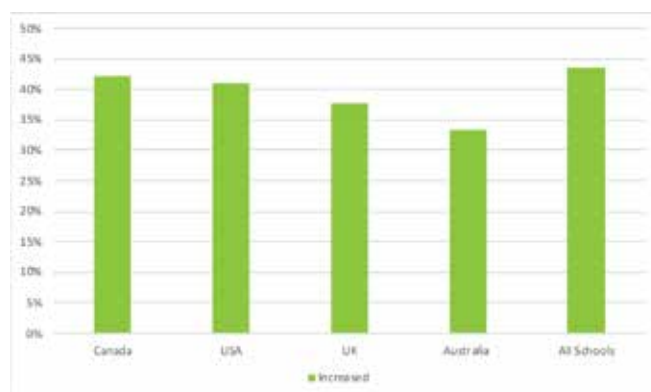


Fig. 3 Percentage of schools that have increased outdoor learning since getting involved in Outdoor Classroom Day.

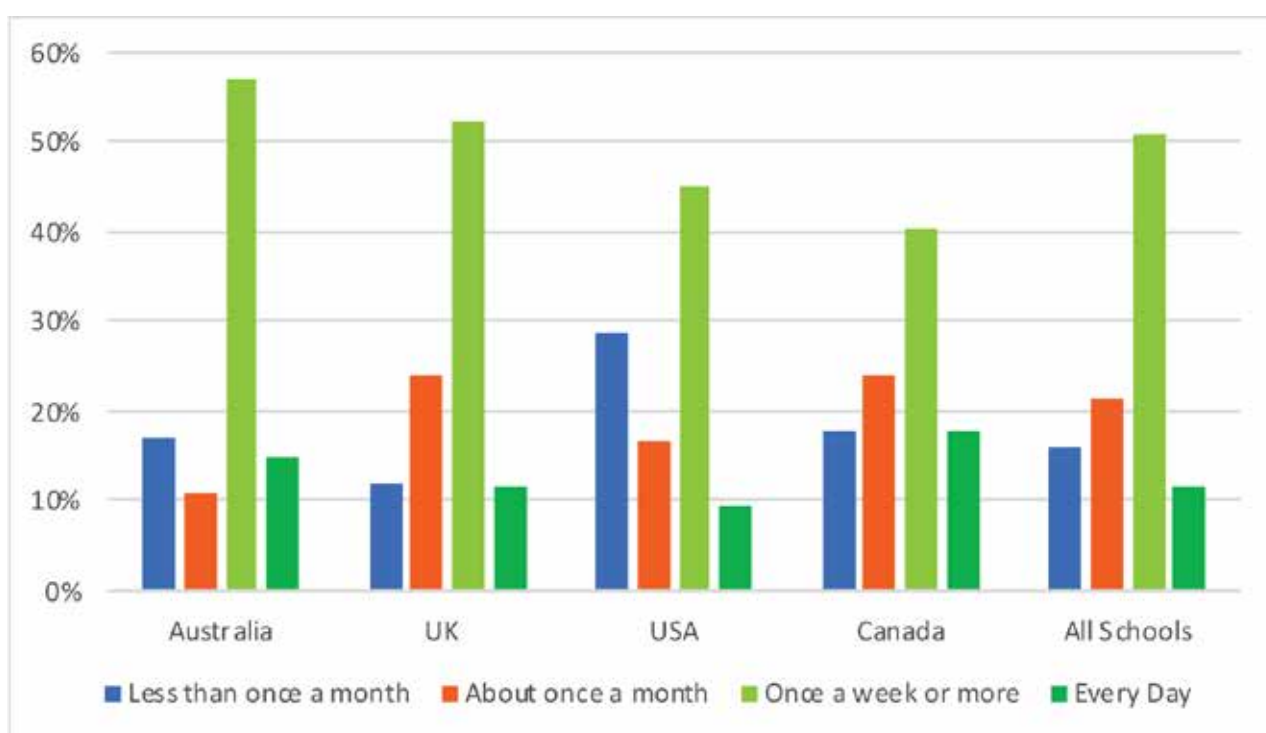


Fig. 2 Frequency of outdoor learning - Primary Schools

1.3 What stops children going outside at school every day?

Barriers that prevented Australian teachers from taking lessons outdoors included:

- pressures caused by curriculum work
- the perceived difficulty of moderating children's behaviour when outside
- extra preparation needed to take classes outside
- other teachers' perceptions that learning outside is not as valuable as learning inside
- parents' perception that learning outside is not time well spent

However, children were kept in at playtime less frequently in Australia than elsewhere for:

- finishing classwork or homework (22% Australia, 24% US, 38% UK)
- poor behaviour in class (22% Australia, 28% US, 44% UK).

In Australia, other than the weather (68%), the main barriers to taking lessons outdoors were:

- pressures caused by curriculum work (39% in Australia; Canada 33%; Global 40%; US 47%; UK 45%)
- more difficult to moderate children's behaviour when outside (28% in Australia; Global 14%; Canada 12%; US 12%; UK 10%)
- other teachers' perceptions that learning outside is not as valuable as learning inside (18% in Australia; Global 15%; Canada 19%; US 12%; UK 13%)
- parents' perception that learning outside is not time well spent (11% in Australia; Global 9%; Canada 10%; US 2%; UK 9%)
- extra preparation needed to take classes outside (18% in Australia, Global 20%; Canada 20%; US 26%; UK 21%).

One in ten (11%) Australian teachers said they were restricted from taking lessons outdoors by the perception of (some) parents that learning outside is not time well spent. While not high, this is still a concern, particularly given the data came from a sample of schools that were likely to be more supportive of outdoor learning and play. This is also at odds with results of other surveys suggesting that parents see time outdoors as extremely valuable. For example, the Planet Ark survey⁶² of 1,000 Australians reported that three quarters of parents believe we don't spend enough time outdoors.

It is noteworthy that in Australia playtime was denied to children less often than elsewhere: 44% of teachers in the UK said poor behaviour in class led to children being kept in at playtime, while only 22% of Australian teachers said the same.

Worldwide, weather and clothing were the most frequently mentioned barriers to taking children outdoors⁶³:

'The children don't always come dressed appropriately and complain of being cold.' (Teacher in Canada)

'Parents unable to provide suitable clothing.' (Teacher in the UK)

'We are currently applying for funding to purchase a class set of gumboots, raincoats, rain hats and umbrellas to allow us to use the outdoor areas throughout the year regardless of the weather.' (Teacher in Australia)

'We are not allowed to take the children out when the temperature is -20°C or colder.' (Teacher in Canada)

'Our weather restrictions are tornadoes, frost bite and hail so large it can cause concussion.' (Teacher in Canada)

'Cannot go out if temps are below 28 degrees (-20C).' (Teacher in the US)

'Florida weather is unpredictable, it could rain in any moment.' (Teacher in the US)

Only in the US did teachers report being specifically restricted from going outdoors by the administrator of the school or district:

'Per district guidelines, we are only allowed to take students outside for 20 minutes on non-PE days and there are limitations on time and the amount of students that are outside at one time.' (US)

Overall the Outdoor Classroom Day survey data indicated that the barriers to getting outdoors are very similar worldwide. Nonetheless, there are some large disparities between countries in terms of the effect these barriers have, for example, 58% of Australian primary schools have more than an hour of playtime a day compared with only 11% of primary schools in the US. This may imply that Australian teachers are better prepared to challenge or overcome difficulties, or that there are some key cultural or psychological barriers which are not reported in this survey.

Respondents in all countries cited 'limiting beliefs' which they felt they had to address in order to make outdoors learning a regular opportunity:

'The children love it, they really enjoy being outdoors and take in so much. The parents are very supportive and the feedback is good. The teachers tend to shy away from outdoor activities as they can be hard to organise and children are so excited to finally be outside it may not always go to plan. This combined with the added workload pressure in class often means it's easier to work indoors.' (Teacher in the UK)

'We are slowly changing staff attitudes. Some staff still don't allow children to play with sticks, climb trees etc. Most staff are happy to take part in outdoor days but I'm not sure they are doing it on a more regular basis.' (Teacher in Australia)

62 Planet Ark, (2018).

63 Weather stops outdoor play: 79% Global; 82% Australia; 84% Canada; 76% UK; 81% US

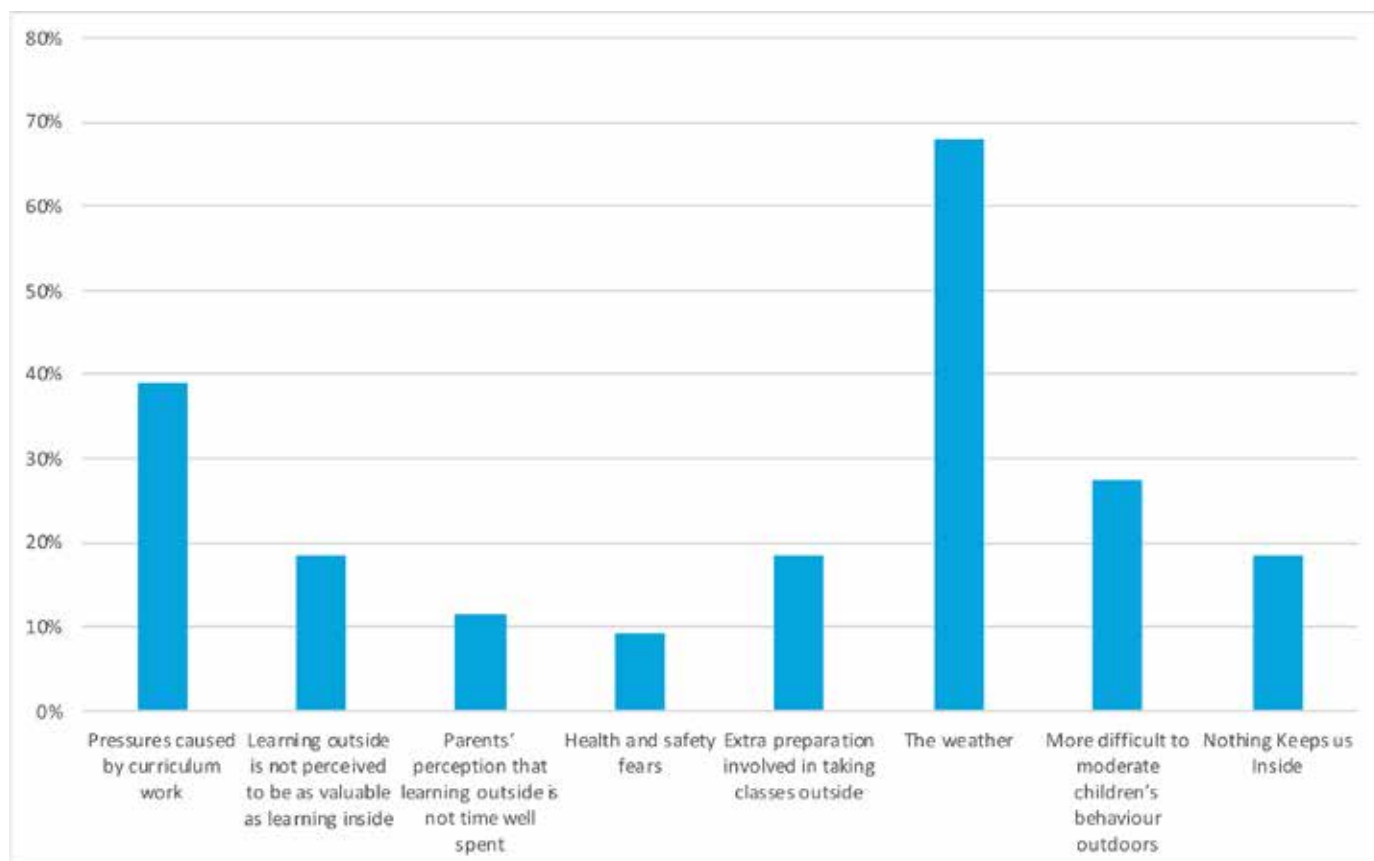


Fig. 4 Factors preventing Australian teachers from taking children outdoors for lessons

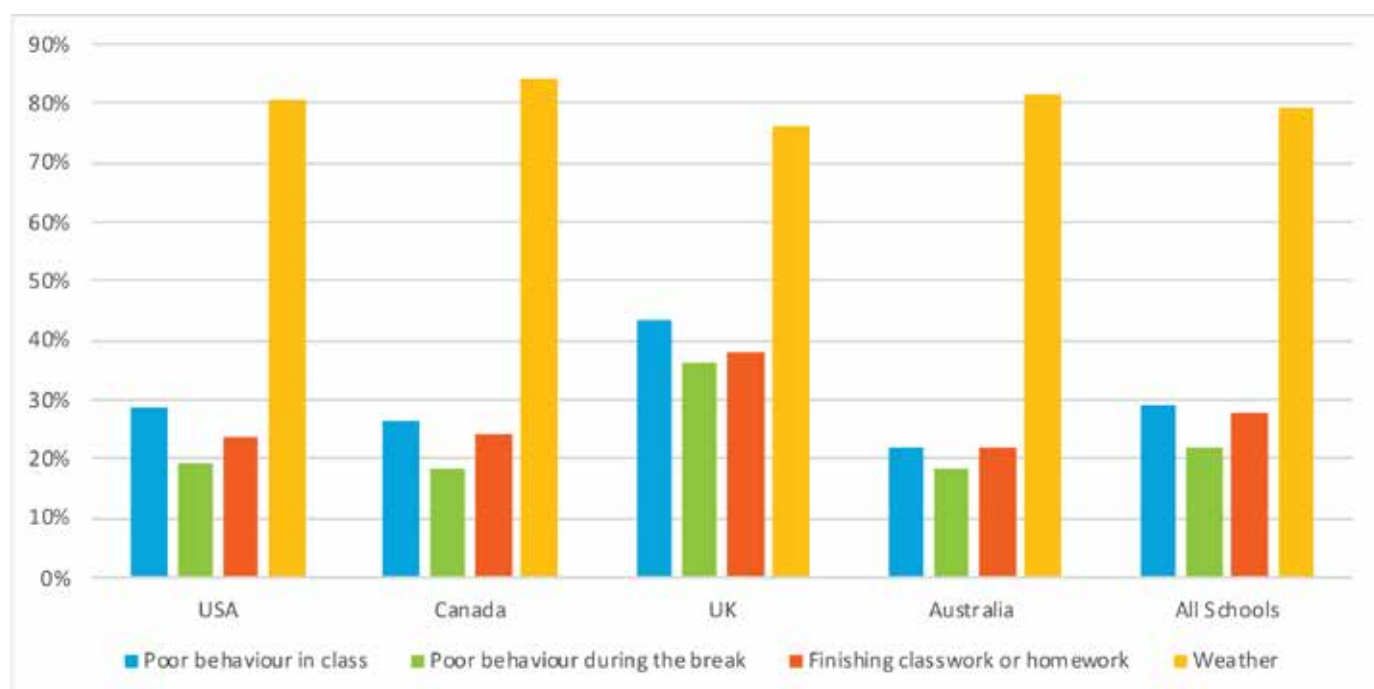


Fig. 5 Teachers' reported barriers to outdoor playtime

1.4 Nothing keeps one in five Australian schools indoors

Australian teachers were the most committed to playtime in this survey, with 21% saying that nothing keeps children indoors at breaktimes. This compares with 6% of teachers in the US, 11% in Canada and 16% in the UK (see Fig. 6). A similar 18% of Australian teachers said nothing stops them taking lessons outdoors, but in this they were behind the UK at 24%.

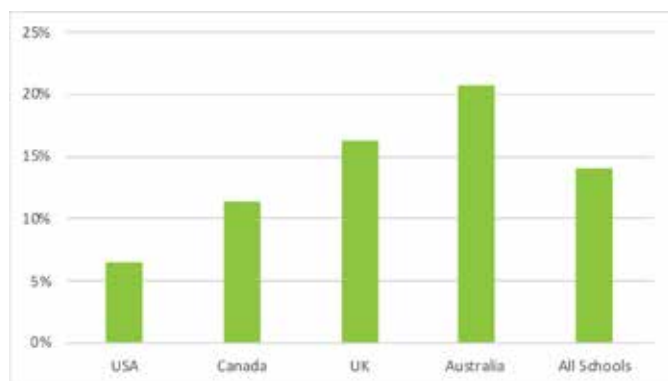


Fig 6. Teachers reporting 'nothing stops outdoor playtime'

1.5 Building key skills for school, for childhood and for life

Australian teachers responding to the survey said that playing outdoors develops key skills for life, including:

- social skills (99%)
- imagination and creativity (98%)
- ability to focus on a task (70%)
- fine motor skills (98%)
- better understanding of the environment (92%).

Australian teachers said that playing outdoors helps children when they return to class, as they are:

- more able to concentrate (62%)
- more engaged with learning (77%)
- better behaved (65%)
- happier (89%).

Australian teachers said that when children learn outdoors they are:

- more engaged in learning (84%)
- better behaved (63%)
- more able to concentrate (62%)
- happier (85%).

Almost every Australian teacher who responded to the Outdoor Classroom Day 2017 survey said that taking children outdoors had a positive effect on children's attitudes and behaviours. They reported that children are more engaged in learning (84%), better able to concentrate (62%) and better behaved (63%), so it is not surprising that 85% said they want more time to take lessons outdoors⁶⁴.

Almost nine out of ten (89%) teachers said children are happier after playing outdoors.

Australian teachers recognise that playing outdoors develops key skills for life, including:

- social skills (99%)
- imagination and creativity (98%)
- ability to focus on a task (70%)
- fine motor skills (98%).

Qualitative responses showed that many teachers believe that playtime is essential for developing resilience, confidence and all-important 'grit'.

'Children are calmer, more regulated in their behaviour and open to learning.' (Teacher in Australia)

'They are always more animated! And language conversations increase. All good!' (Teacher in Canada)

'They solve creative problems; they come back in with new ideas and creative solutions.' (Teacher in South Africa)

'Self-confidence increased. Willingness to have a go and keep trying increased.' (Teacher in Australia)

Teachers in Australia were also very positive about taking lessons outdoors, in particular 84% noting that children are more engaged in their learning when outdoors.

The qualitative data from the survey showed the breadth of positive changes that teachers noted:

'They can see a context for their learning.' (Teacher in Australia)

'Children are able to use their imaginations more in nature. Children create different social connections when out in nature. It opens up social groups.' (Teacher in Australia)

'Better self-regulation, problem solving, communication, investigation, co-ordination and co-operative play behaviours... children have also improved in their strength and stamina for daily physical activity.' (Teacher in Canada)

'Children are more open in their thoughts now... They are improved in their skills... Children have started working in groups and their bonds have become stronger.' (Teacher in India)

The survey did not gather information on the quality or type of outdoor lessons taking place. It is important to recognise that asking teachers to assess the capabilities they observe when taking lessons outdoors tends to give a biased view. Nevertheless, results from the survey mirror similar research in this field⁶⁵.

64 93% US; 89% Canada; 85% Australia; 81% UK.

65 See Part 2 of this report.

What is heartening is that outdoor lessons seemed to engage children more in learning in every country surveyed, with an average 88% of teachers saying that children's learning was improved (84% in Australia⁶⁶). Alongside this, 89% of teachers worldwide, 85% in Australia, say that taking lessons outdoors makes children happier.

'They don't think that they are doing work!' (Teacher in the UK)

'The students love to attend the school. Truancy has gone down.' (Teacher in the US)

1.6 Getting outdoors creates a better connection to nature and place

There is a growing concern that children are gradually being disconnected from the natural world, a phenomenon encapsulated in Richard Louv's concept of 'nature deficit disorder'. The Outdoor Classroom Day survey asked teachers if they thought children gained a better understanding of the environment through outdoor play. Figure 7 shows teachers' responses to this question around the world. The variation is small worldwide, with 92% of Australian and 88% of Canadian teachers identifying this as an outcome, compared to 83% in the UK and 82% in the US. It could well be that the small difference reflects the fact that outdoor learning is a specific part of the curriculum in Australia and Canada in a way it is not (yet) in the UK or the US.

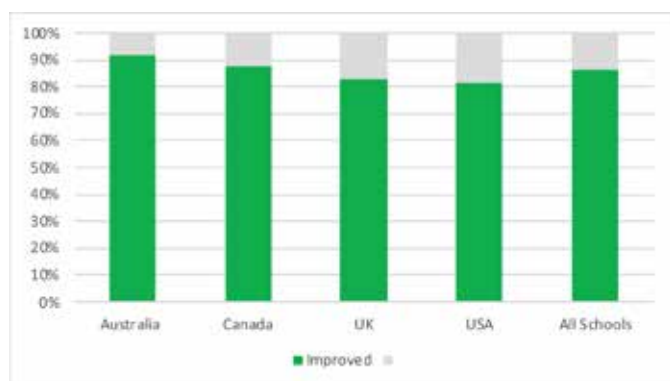


Fig. 7. Percentage of teachers identifying that children have a better understanding of the environment after playing outdoors

Children developing a connection to nature and place as they go outdoors more was a consistent response in the qualitative responses to the surveys about both playing and learning outdoors:

'When taking lessons outdoors children develop positive attitudes to environmental issues and increased pride in their school grounds.' (Teacher in Australia)

'They are more caring towards other living things – plants and animals.' (Teacher in the UK)

'Increased awareness for conservation efforts. Our third-grade students compared the biodiversity of a nearby natural area with mowed areas. They had an idea! We should increase the biodiversity in our school's landscape. We received a grant and we're going to see their dream become a reality.' (Teacher in the US)

'Playing outdoors builds an appreciation for the natural environment – from head to heart to hand (learning, appreciating and taking action for conservation).' (Teacher in South Africa)

'Our students are all autistic and benefit greatly from the calm environment outside.' (Teacher in the UK)

'Playing outdoors builds connection to nature that fosters their role in taking responsibility for their environment.' (Teacher in Canada)

1.7 Getting outdoors is good for teachers too

One, perhaps unexpected, trend that emerged in the qualitative data was that staff wellbeing had improved too...

'The teachers are happier as well. When you get outside of your classroom and breathe fresh air it takes a bit of the everyday stress of being cooped up all day away.' (Teacher in the US)

This may be something to explore further.

1.8 Why is outdoor learning and play valued in some schools and not all schools?

Australian children have more playtime and more outdoor lessons than children in other countries.

33% of Australian schools reported increasing outdoor learning since getting involved in Outdoor Classroom Day 2017 (compared to 44% worldwide)

18% of Australian schools have increased playtime since getting involved in Outdoor Classroom Day (compared to 22% worldwide)

Nevertheless, there are big differences in the amount of time dedicated to outdoor learning and play across Australia.

One striking result is the difference between schools within countries. While many Australian schools have longer than average break times and more outdoor lessons compared with schools in the rest of the world, a sizeable proportion still rarely take lessons outdoors and have shorter than average recesses.

Almost three quarters of Australian teachers (72%) took lessons outdoors at least once a week and six (11%) primary schools in the survey had over 90 minutes recess, not including lunchtime. At the same time, 1 in 6 (17%) teachers reported taking lessons outdoors less than once a month and while none of the Australian primary schools had less than half an hour of playtimes, 42% had less than an hour.

This lack of consistency could be due to several factors, including the differences between rural and urban schools, and the conflation of early years and older primary classes. With a larger data set, and more time, future research could explore variations between states and between urban and rural areas.

⁶⁶ Canada 87%; UK 90%; US 91%

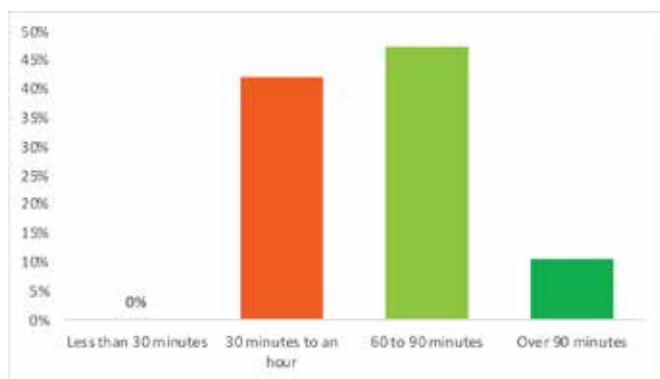


Fig.8 Time for recess (excluding time for eating) - Primary Schools

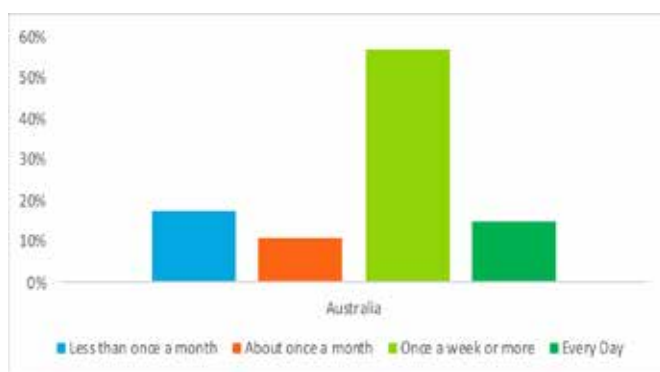


Fig.9 Frequency of Outdoor Learning - Primary Schools in Australia

Unlike most of the world, many states in Australia recognise the value of outdoor learning and play on their websites or in the national curriculum⁶⁷:

'The development of positive relationships with others and with the environment through interaction with the natural world can be facilitated through outdoor learning. These relationships are essential for the wellbeing and sustainability of individuals, society and our environment.' (Australian Curriculum)

'Outdoor play is fundamental to childhood and the department supports the development of outdoor learning environments across South Australia.' (South Australia Department of Education)⁶⁸

Wales and Scotland in the UK have similarly explicit policy support for outdoor learning and play. However, in these countries, as well as across Australia, there is still the issue of helping teachers feel supported and inspired to take lessons outdoors every day and make play a key part of the school day:

'We find that some teachers find it hard to balance the pressures of the required content of the curriculum with taking pupils outdoors. We try and provide training on how to take the curriculum outdoors and link it to aspects of the local environment.' (Outdoor Education trainer, UK)

Playtime is universally recognised as important worldwide, with 99% of Australian teachers in the Outdoor Classroom Day 2017 survey saying they believe that time to play outdoors throughout the day is critical for children to reach their full

potential. Unsurprisingly, over two thirds (69%) think that children should play outdoors more⁶⁹ and 85% want more time to take lessons outdoors⁷⁰.

Further research is needed to understand: what schools mean by 'outdoor learning'; what playtimes are actually like; and the kind of support teachers need to make sure their outdoor learning and playtimes are not only more frequent but also high quality.

So what has been the tangible impact? Last year, 2017, was the first year of the dedicated campaign in Australia (although about 200 schools had been involved in previous years as part of the global campaign). We asked the schools that joined the campaign in 2017 what changes they had made by the following March, and were delighted to find out that:

- 33% of Australian schools report increasing outdoor learning since getting involved in Outdoor Classroom Day (compared to 44% worldwide)
- 18% of Australian schools have increased playtime since getting involved in Outdoor Classroom Day (compared to 22% worldwide).

In conclusion, Australia may lead the world in getting outdoors, but it's far from enough. Part Two of this report sets out why outdoor learning and play need to be part of every school day.

'If we could spend the whole day outside every day we would!' (Teacher in Australia)

69 68% Global; 84% Canada; 50% South Africa; 55% UK; 72% US.

70 87% Global; US 93%; Canada 89%; Australia 85%; South Africa 85%; UK 81%.

67 <https://www.australiancurriculum.edu.au/resources/curriculum-connections/portfolios/outdoor-learning/>

68 <https://www.education.sa.gov.au/teaching/projects-and-programs/outdoor-learning-environments>



2 Why outdoor learning and play should be part of every school day

‘We feel that learning outdoors is as important as sitting at the desk! We have implemented daily outings for lunchtimes at our school allotment and cover topics such as growing our own veg, water science in the pond and so forth. Our children frequently ask to work anywhere but the classroom as this provides space and independence for them to flourish.’

Teacher in the UK, Outdoor Classroom Day Survey

‘Some teachers already learn and play outdoors but I would like to see it become something important in our school.’

Teacher in Australia, Outdoor Classroom Day Survey

2.1 Children are getting outdoors less

One of the premises of this review is the oft-cited realisation that children’s engagement with nature is declining⁷¹. In just one generation physical activity rates in Australia, and worldwide⁷², have significantly reduced with 4 in 5 Australian children getting less than the recommended 60 minutes a day of physical activity. A study conducted by the University of Michigan shows that American children currently spend 12 hours a week less playing outdoors than children did in the 1970s⁷³. Studies in Australia, the UK, South Africa, Brazil, India and Indonesia all tell a similar story⁷⁴. The causes of this loss are complex and multifaceted, with urbanisation, parental concerns about safety and the reduction of green space often cited as key issues.

The irony is that heightened concern for children’s welfare could be putting today’s children at an unprecedented high risk of developing mental and physical health problems. One of the consequences of our risk-averse culture is that, across the world, children are now spending less time outdoors than maximum security prisoners⁷⁵.

Parental perceptions of their neighbourhood have a significant and measurable effect on children’s access to play. In a study of 78 parents in a Melbourne suburb, 94% cited safety as their number one concern⁷⁶. Recent studies that have tracked where children play show that, increasingly, most play now occurs in back yards or indoors⁷⁷. In *The History of Childhood*⁷⁸ Hugh Cunningham notes that the current generation of children is the first in human history to have ‘safety’ as their primary concern. In all previous generations sickness or war would have been the utmost concerns.

It is important to recognise that not all children have equal access to the outdoors. In the UK, a report from the National Children’s Bureau showed that children from deprived backgrounds have nine times less access to green spaces than children from the least deprived backgrounds. The research argues that this inequality didn’t exist 50 years ago. It seems that, tragically, for those children who most need access to green spaces⁷⁹, the situation is getting worse. While there is no specific data on this theme in Australia, a study by Veitch et al⁸⁰ *Where do children play?* suggests that here too there are higher constraints on children’s freedom if they are from low socio-economic status (SES) families.

The World Health Organisation, together with leading health councils in Australia, the UK, the US, Singapore, India and China views sedentary behaviour as the number one reason why children born today are likely to die at a younger age than their parents⁸¹. Many Australian health and education advisors support outdoor learning and endorse the importance of playtime⁸². Parents want their children to be outdoors more. The majority of teachers say that time outdoors every day is important.

But, for all these good intentions, and for a multitude of reasons, while children used to enjoy time and freedom to enjoy the outdoors, this is no longer the case⁸³.

One in six of the Australian teachers we surveyed teach outdoors less than once a month. A Planet Ark survey in 2017 found that fewer than 34% of Australian teachers teach outdoors more than 15 minutes a term.

In his seminal work *Last Child in the Woods*⁸⁴ Richard Louv coined the term ‘nature deficit disorder’ to describe a

71 Gray, T., (2013). and on her blog: <https://toniagray.com/>

72 Active Healthy Kids Australia, (2016).

73 Juster et al. (2004).

74 Singer et al., (2009).

75 Robinson & Aronica (2018) quoting research conducted for Dirt is Good.

76 Veitch et al. (2006).

77 Prezza et al. (2001); Veitch et al. (2006).

78 Cunningham, (2012).

79 National Children’s Bureau, (2013)

80 Veitch et al. (2006)

81 World Health Organisation, Key Facts: Physical Activity

82 Active Healthy Kids Australia, (2016); outdoorededucationaustralia.org.au/

83 Gleave & Cole-Hamilton (2012); Gleave (2009); Gray, P (2013); Carver et al. (2013), Louv (2008).

84 Louv, (2008).

damaging lack of engagement with the outdoor world. Although there was some research available to support his hypothesis, there was little that was conclusive. Twelve years later, when Florence Williams published *The Nature Fix*⁸⁵ she was able to draw upon a large number of robust surveys; a wealth of case studies and peer-reviewed research papers; as well as repositories of research such as the one facilitated by the Children and Nature Network⁸⁶. The research seems to prove that the smell of pine makes us relax and focus⁸⁷; that trees hold our attention in ways that solid lines of concrete cannot; that time outdoors improves our sleep, our memories, our curiosity, our desire to exercise more and eat better and to simply smile⁸⁸.

One of Outdoor Classroom Day's goals is to make schools champions of the outdoors so that Australian children and families, and children round the world, get outdoors every day. The evidence about why they should is both readily available and compelling.

2.2 Getting outdoors to learn and play improves educational outcomes

'Taking almost any class outdoors can have incredible benefits on children's engagement and enjoyment of education and increase academic attainment. Research shows that even subjects that might seem to have little to do with the outdoors, such as literature or dance, can benefit from being taken outdoors.' (Waite et al. 2016)

'We believe that the learning environments are a source of deep learning for our students. They are a place where students are engaged and develop dispositions for learning.' (Teacher in Australia)

How do children learn to be creative, to problem-solve, to deal with constantly changing social interactions and keep persevering in the face of increasing challenges? By simply playing and learning outdoors, especially if activities are playful, self-directed, or with interested adults present who can help scaffold learning⁸⁹.

The revised Australian Curriculum⁹⁰ states that outdoor learning can be instrumental in:

- teaching and learning self-reliance, interdependence and leadership
- the development of an adventurous spirit
- managing personal risks
- experiencing safe journeys in nature
- learning the value of lifelong outdoor recreation for enjoyment, health and wellbeing
- understanding nature through direct experience; thereby fostering deeper human-nature relationships.

In reviewing the Environment as an Integrating Context (EIC) program, David Sobel (2004)⁹¹ reported that state reviewers had expected to see an increase in students understanding of science, but were surprised to see improvements across all academic disciplines.

A recent study of 40 schools across the US indicates that using EIC in school curricula results in wide-ranging, positive effects on student learning. The study found that EIC improves student achievement in social studies, science, language, arts and maths. Students, teachers and administrators also reported other significant effects including: development of problem-solving, critical thinking and decision-making skills; increased enthusiasm and engagement in learning; and gains in summative measures of educational achievement such as standardised test scores and grade point average⁹².

A five-year study conducted by Natural England⁹³ across the South West of England, the largest ever trial of an outdoor education program, arrived at a similar conclusion: learning outdoors helps children improve in a range of capabilities. Responses from the 125 schools involved illustrated a variety of positive effects, with teachers reporting that outdoor learning increased creativity, added wonder and experience to learning and made subjects come to life⁹⁴. By using the world as a tool for learning, children were better able to understand difficult concepts:

*'This morning with the numeracy, I know a lot of children would have really struggled with grasping the concept of perimeters, but being able to walk it out [around the playground] ... made a lot more sense to them,'*⁹⁵

Teachers involved in the study also reported increased attendance and increased productivity among pupils, again demonstrating that learning outdoors increases children's engagement with learning. Eighty-five per cent of staff taking part in the project identified time spent outdoors as having a positive effect on student behaviour (Waite et al., 2016).

There is good evidence that through exposure to more engaging stimulus, outdoor learning can have a positive impact on a child's long-term memory as there is reinforcement between the emotional and the cognitive functions in the brain. Children who are more engaged in their learning are more likely to retain information⁹⁶.

A Norwegian study showed that children at pre-school who enjoyed large amounts of outdoor time consistently scored better on standardised tests for executive function, attention and short-term memory than those who went to pre-schools with fewer hours of outdoor time. The study also looked at the lasting effects of outdoor education on 546 children and found that even after children entered the primary school system, those who had enjoyed more outdoors time during pre-school continued to score better on standardised testing⁹⁷.

85 Williams, (2017).

86 <https://www.childrenandnature.org/learn/research>

87 Li, (2010).

88 Louv, (2012); Moss, (2012); Williams, (2017) and McGurk, (2017) all summarise the research and how it relates to their own children or children in general.

89 Brown, (2008); Beunderman, (2010); Gopnik, (1996); Gray, P., (2013); Gray & Martin, (2012); Kellert, (2013); Kellock, (2015); Palmer, (2015); Robinson & Aronica, (2018); Vygotsky, (1967).

90 <https://www.australiancurriculum.edu.au/resources/curriculum-connections/portfolios/outdoor-learning/>

91 Sobel, (2004).

92 Lieberman & Hoody, (1998) in Sobel, (2004) p36.

93 Natural England worked with the UK Government's Department for the Environment (DEFRA) supported by the University of Portsmouth.

94 Waite et al., (2016).

95 UK Primary school teacher as reported in Waite et al, (2016).

96 Brown, (2008).

97 Ulset et al. (2017).

One finding that surprised some of the teachers involved in the Natural England survey was that 72% said getting outdoors to teach regularly improved their own health and wellbeing – 69% said it increased their own job satisfaction and almost 4 in 5 (79%) said it improved their teaching practice. This is supported by the anecdotal evidence coming from the Outdoor Classroom Day 2017 survey.

Society often seems to characterise play as the opposite of academic learning, but recent research tells a different story.

‘Outdoor play provides the opportunity to improve sensory integration skills. These activities involve the child as an active participant and address motor, cognitive, social, and linguistic domains. Viewed in this light, school recess becomes an essential part of a child’s day. It is not surprising that countries that offer more recess to young children see greater academic success among the children as they mature.’

American Academy of Pediatrics, 2018⁹⁸

In a robust study comparing two matched classes, Kuo et al (2018) found that ‘Classroom engagement was significantly better after lessons in nature.’

The Liink project in Texas, US, most starkly shows how increased recess reduces fidgets and improves on-task behaviour⁹⁹. Inspired by Finnish education, the program has introduced four recess periods throughout each school day to an ever-increasing number of elementary schools. All the schools involved in the trial have, so far, reported improved on-task behaviour, better attention to task, less fidgeting and improved focus among children, as compared to children of a similar age and background who are not involved in the program¹⁰⁰.

The consensus among teachers is that children are refreshed, more attentive and less disruptive in class after longer break times. They also report that significantly less time is wasted in transitioning between classes and recess, which means that having extra breaks doesn’t necessarily have to mean less classroom time (evidence from the Liink Project, as reported in Rhea, 2015).

‘Children are built to move, and having more time for unstructured, outdoor play is essentially like a reset button. It not only helps to break up the day, but it allows children to blow off steam and apply what is taught in the classroom to a play environment where the mind-body connection can flourish.’

Debbie Rhea – Director of the Liink Project

David Sobel, writing in *Place Based Education* (2004) summarised nine studies comparing students taking part in EIC programs with students in non-EIC programs. Schools taking part in the EIC program saw far higher attendance and fewer disciplinary referrals. In one school, teachers made 560 referrals in the year prior to their participation in EIC and 160 referrals in their first year of participation in EIC¹⁰¹.

In one study, Canadian teachers noted that:

‘energy release from playing outside creates a more positive mind set for children to then concentrate and learn more in the classroom later in the day’

Copeland et al., 2012

A 2011 comparison study of two early years settings – one indoor, one mostly outdoor – conducted by Kellie Dowdell, Tonia Gray and Karen Malone showed that children who attended the outdoor kindergarten, and who consequently enjoyed a richer, ever-changing environment, were more engaged with their activities, paid more attention and stayed on-task for longer, even though both kindergartens were, in other respects broadly equivalent, offering good-quality childcare and education. Children at the outdoor kindergarten also benefited from richer playful interactions with adults, inviting adults into their play and sustaining playful interactions that helped to scaffold learning.

Such findings corroborate those of the Outdoor Classroom Day survey (as outlined in the previous section).

‘I operate a Bush Kindy¹⁰² with a balance of indoor/outdoor experiences that builds social skills and emotional resilience, children develop a solid understanding of self-assessing their own capabilities leading to increased cognitive abilities, high order thinking and executive function and become stewards of the environment, which is linked to academic achievement.’ (Teacher in Australia)

In 2013, the American Academy of Pediatrics (AAP) wrote:

‘Recess is a necessary break in the day for optimizing a child’s social, emotional, physical, and cognitive development. In essence, recess should be considered a child’s personal time, and it should not be withheld for academic or punitive reasons.’¹⁰³

In 2018, they again wrote about the importance of play, stating that:

‘Play is fundamentally important for learning 21st century skills, such as problem-solving, collaboration, and creativity, which require the executive functioning skills that are critical for adult success.’¹⁰⁴

Brown (2008) points out that frequent breaks lead to optimised learning:

‘Through longer, more frequent and higher quality break times we can ensure that children are learning during classroom time to the best of their potential and we are not wasting time trying to teach brains that have ‘shut-down’¹⁰⁵.

Further to this, children who have the chance to engage in more risky and challenging outdoor activities are more willing to take risks in their own learning¹⁰⁶.

98 Yogman et al. (2018).

99 Rhea & Rivchun, (2018).

100 Ibid.

101 Sobel, (2004) p36-37.

102 Bush Kindy is a form of pedagogy which takes place exclusively outdoors, usually half a day to a full week of early years play-led education.

103 Murray et al., (2013).

104 Yogman et al., (2018).

105 Brown, (2008).

106 Brussoni, (2012).



‘Real learning often happens in fresh air, during physical activity, while having conversations with others, or simply because of an opportunity to concentrate on understanding previous lessons.’

Pasi Sahlberg, 2017

The Finnish educator Pasi Sahlberg, Professor of Education Policy at the Gonski Institute for Education, University of New South Wales is campaigning to ‘*Make Recess the Right of the Child*’¹⁰⁷. He points out that ‘Time is a limited yet renewable resource in education.’ and, additionally, that recess – good quality recess, in grounds that support children’s play and development needs with trained staff – is not a waste of time, but a huge and invaluable investment in children.

2.3 Getting outdoors to learn and play is essential for physical health

‘Outdoor environments naturally inspire children to be more physically active... Consistent exposure to nature decreases stress and anxiety, helps elevate mood, and helps with emotion.’ (Teacher in India)

‘Children create different social connections when out in nature.’ (Teacher in Australia)

Regular time outdoors has been linked to increased physical activity, improved mood, better eyesight, better bone development and healthier immune systems¹⁰⁸.

Children everywhere, including in Australia, are leading significantly less active lives than children a generation ago¹⁰⁹ and this inactivity has important health implications¹¹⁰. The Active Healthy Kids Network – a collaboration of physical activity researchers from across Australia – released the latest Physical Activity Scorecard in 2016, and graded the overall physical activity levels of children and young people as a failing D minus.

The World Health Organisation is absolutely clear about the dangers of sedentary behaviour¹¹¹:

- Insufficient physical activity is one of the leading risk factors for death worldwide.
- More than 80% of the world’s adolescent population is insufficiently physically active.

While inactivity is most frequently linked to a rise in obesity, research also shows it is related to a rise in Type 2 diabetes and low bone density. A meta-analysis of studies worldwide conducted by Janssen and LeBlanc in 2010¹¹² concludes that 90 minutes of moderate physical activity a day lowers cholesterol and blood pressure, increases bone density and aids muscle and cardiovascular development.

Allowing more opportunities for play and for playful learning outdoors – at least an hour a day – could go a long way to meeting the Australian Physical Activity and Sedentary Behaviour Guidelines¹¹³ (Australian Government Department of Health recommendations for the minimum amount of physical activity):

- Children up to 5 years old should be getting at least three hours a day of moderate to vigorous physical activity.
- Children aged from 5 to 17 years old should have at least 60 minutes per day, with strength building activities on at least three days in a week¹¹⁴.

While sports and active travel (walking, cycling, running) are important in increasing children and young people’s physical activity, outdoor play is often overlooked. When engaged in play, children will self-sustain physical activity, often for long periods of time¹¹⁵. Recess and outdoor play are crucial locations for physical activity¹¹⁶.

Children are far more likely to engage in active rather than sedentary play if they are playing outdoors. A study by the Department of Health Services, University of Washington, found that children aged 6 to 11 years old were active for 41% of the time while engaged in outdoor free play, as opposed to 18% of the time during indoor free play¹¹⁷. Studies done using GPS tracking in the UK support this, showing that children are more than two-and-a-half times more active when outdoors compared to indoors¹¹⁸. A recent study of Dutch Green Schoolyards showed that girls in particular were more physically active when playing outdoors in playgrounds with more green features¹¹⁹. It is no surprise then, that Active Healthy Kids Australia recommends: ‘Just let them play!’¹²⁰.

‘In a game of chase, children are physically active and maintain the game by negotiating and agreeing to abide by the rules. Yet what they value is the thrill of the chase.’

Lester and Russell, 2008

Active free play is also critical in helping children develop balance, co-ordination and improved motor fitness¹²¹. It helps develop fine motor skills that are essential for holding a pen and a paintbrush, for ball control and for building core strength, skills that will underpin a child’s physical fitness for many years to come. Aside from running or jumping, children need core strength just to sit still¹²².

Outdoor lessons can be frequently more physically active than lessons indoors, something which can extend to all ages and all disciplines:

‘My Drama ‘A’ Level class have been studying ‘Antigone’ by Sophocles ... One of the things they need to include in their essay on this topic is an understanding of the original performance conditions of the play. I took the students out on the college field and we measured out the size of the Theatre of Dionysus in Athens as it would have been in 441 BC. The students then had to perform to one another in this enormous space and from this they gained not only an

107 Sahlberg, (2017).

108 Summarised throughout Williams (2017), further references below.

109 Active Healthy Kids Australia, (2016); Duncan & McPhee (2015); Kellert (2013); Planet Ark (2011).

110 Tremblay et al, (2016); Active Healthy Kids Australia (2016); WHO (Date not clear).

111 <http://www.who.int/en/news-room/fact-sheets/detail/physical-activity>

112 Janssen & LeBlanc, (2010).

113 <http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines>

114 Active Healthy Kids Australia, (2016).

115 Yogman et al (2018); McCree et al. (2018).

116 Active Healthy Kids Australia, (2016); Baines & Blatchford, (2011); Beresin, (2016); Centers for Disease Control and Prevention, (2010).

117 Herrington & Brussoni (2015).

118 Cooper et al, (2010).

119 van Dijk-Wesselius et al, (2018).

120 Active Healthy Kids Australia, (2016) p.20.

121 Fjørtoft, (2004).

122 Rhea, (2015).

understanding of the challenges of performing in a huge amphitheatre, but also an active, practical, out-of-the-ordinary experience of learning that they will remember when sitting in their exam!’ (Teacher in the UK)

Alongside good physical health, getting outdoors in all weathers also improves children’s immune systems. In 2010, Qing Li, a South Korean researcher reported on the positive physical effects of ‘forest bathing’ – being out in the woods – with the smell of pine being particularly beneficial for increasing T-killer cell counts¹²³.

David Sobel (2004) reports how students in an ‘Outdoors in all Weather’ program reported suffering 80% fewer infectious diseases (colds, sore throats etc) than children in conventional programs¹²⁴. This is echoed by teachers who took part in the Outdoor Classroom Day 2017 survey:

‘The children have less time off sick – so do the teachers!’ (Teacher in the UK)

Finally, studies in America, South Korea and elsewhere have found that myopia – short sightedness – is a significant predictor in how active children are¹²⁵. Although the causal link between myopia and the outdoors is still being investigated, clinical trials suggest that time spent outdoors – where there is more opportunity to focus on distant objects – is strongly inversely related to myopia. In some parts of the world myopia is becoming endemic, particularly in Asia and South East Asia. In South Korea 80% of children finishing school are short sighted, a level far higher than it should be without an external factor imposed on the children. Furthermore, it has been shown that small interventions at school can drastically cut the rate of progress of myopia in schoolchildren¹²⁶.

Healthier children are more likely to succeed at school. Healthy children come to school more often, can concentrate better, can physically sit at their desks for longer, can see better and can learn more¹²⁷.

2.4 Getting outdoors is a key part of good mental health

‘A child with selective mutism (where a child doesn’t speak to people other than close family), started to relax outside (over 6 months period) and then actually spoke to her friends at outside time. Over time she did this at inside time too.’ (Teacher in Australia)

Following analysis of their latest survey of young people in Australia, the Black Dog Institute has estimated that just under one in four young people aged 15 to 19 years old in the country is at risk of serious mental illness¹²⁸. Worryingly, over the past five years they have also recorded a significant increase in the proportion of young people who meet the criteria of having a probable mental illness, rising from 18.7%

in 2012 to 22.8% in 2016¹²⁹. This echoes findings across the US, the UK, Africa, South East Asia and around the world¹³⁰.

As well as helping children to be physically active, getting outdoors is the cheapest and easiest way to reduce stress. Children’s lives today can be stressful: there are higher academic expectations, as well as intense peer pressure which is exerted almost 24/7 through social media¹³¹.

The 2010 report *Beyond Blue to Green* by Deakin University, Australia¹³² makes the case for nature restoring our sense of wellbeing. It has summarised research from around the world, including an epidemiological study conducted in Adelaide which showed that people living in green neighbourhoods rated their mental and physical wellbeing 1.37 to 1.60 times better than those in neighbourhoods lacking in green space.

A Melbourne study of green schoolyards¹³³ found:

‘principals and teachers perceive that there are benefits to children’s mental health and wellbeing from participating in hands on nature-based activities at school’¹³⁴.

Nature Play South Australia, through a series of case studies, has identified that free play in and with nature supports children’s creativity, feelings of belonging, and sense of efficacy¹³⁵. That sense of efficacy, of self-determination, is a cornerstone of children’s ability to thrive¹³⁶.

A recently published case study of children from deprived and vulnerable families in England highlights the restorative power of the outdoors for children under stress¹³⁷. The authors illustrated this with one excerpt from a conversation:

– When we get into the woods, please can I go and sit somewhere by myself for five minutes?

– Of course. Why would you like to do that?

– Because this is the only time I get some peace and quiet. (Child F, Y2)

McCree, Cutting, Sherwin, 2018

For many children around the world, the school playground is the only place where they are licensed to play at all¹³⁸. Chatterjee reports that, despite most school grounds in India being little more than bare concrete surfaces, these spaces offer many young girls the only access they have to outdoor and social play, as cultural expectations and taboos prevent them playing out in neighbourhood streets¹³⁹. Similarly, young

123 Li, (2010)

124 Sobel, (2004).

125 Yogman et al (2018); Jones et al, (2007); Rose et al, (2008), French et al, (2013).

126 Rose et al, (2008).

127 Langford et al (2014); Brussoni et al, (2015); Robinson & Aronica, (2018); Strauss and Hanscom, (2014).

128 Mission Australia & The Black Dog Institute, (2017).

129 Mission Australia & The Black Dog Institute, (2017) p5.

130 http://www.who.int/mental_health/maternal-child/child_adolescent/en/ <https://www.channelnewsasia.com/news/singapore/more-kids-in-singapore-seeking-help-for-mental-health-issues-9241214> Omigbodun and Belfer, (2016); Patalay and Fitzsimons (2017); Sznitman et al. (2011).

131 Mission Australia & The Black Dog Institute, (2017); Chawla et al. (2014); Rickinson et al, 2014; Brussoni et al (2015); Gleave & Cole-Hamilton, (2012).

132 Townsend and Weerasuriya, (2010).

133 In Townsend & Weerasuriya, (2010) p.67.

134 Maller & Townsend, 2005 in Townsend and Weerasuriya, (2010).

135 Nature Play, SA (2017).

136 Stixrud & Johnson, (2018).

137 McCree et al, (2018).

138 Chatterjee, (2017).

139 Chatterjee, (2015).

teenage girls in Nepal are often not permitted to play at home because it is perceived as sign of immaturity, yet they can and do still play at school.

Stuart Lester wrote about play as a means for children to create uncertainty – spinning themselves around, poking a sleeping adult, imagining themselves in ridiculous situations¹⁴⁰. By experimenting with uncertainty children can develop appropriate strategies and responses to chaotic situations. By creating conditions of mild stress, they learn to live with, to enjoy even, stressful situations. If we shield them completely from opportunities to test their stress responses, they will forever be slightly anxious when facing new situations.

The Australian academic Tonia Gray also discusses how, through play, children begin to understand the self, regulate emotions, make friends and get along with others, develop interests and competencies, make decisions and solve problems¹⁴¹.

By denying children free play opportunities we are denying their chance to develop resilience and self-reliance.

Being able to direct their own activities and play without the intervention of adults helps children develop a critical sense of independence and belief in themselves¹⁴². This is an indispensable skill for children to have as they grow up, change schools, develop friendships, face exams and explore opportunities. It is also an essential capability for life¹⁴³. Against this, increasing their exposure to external goals in the form of structured activities can lead to increased levels of anxiety, depression and the need for external approval¹⁴⁴.

In *The Decline of Play and the Rise of Psychopathology in Children and Adolescents*, Peter Gray summarised the link between opportunities for free play and positive mental health outcomes as follows:

‘Play functions as the major means by which children

(1) develop intrinsic interests and competencies;

(2) learn how to make decisions, solve problems, exert self-control, and follow rules;

(3) learn to regulate their emotions;

(4) make friends and learn to get along with others as equals; and

(5) experience joy.

Through all of these effects, play promotes mental health.’¹⁴⁵

2.5 Getting outdoors connects us to place and the environment

‘No one will protect what they don’t care about and no one will care about what they have never experienced.’

David Attenborough

There is a wealth of literature to suggest that environmental stewardship and connection with place is strongly connected with the amount of time we spend immersed in nature when we are children¹⁴⁶. A 1999 study¹⁴⁷ of 1,259 students from nine countries, including Australia, found that direct experiences with nature had a bigger impact on subsequent engagement with pro-environmental behaviour than simply learning about nature from books.

Nine out of ten (92%) of Australian teachers in the Outdoor Classroom Day 2017 survey¹⁴⁸ said that playing outdoors developed children’s connection to the environment. Natural England’s study¹⁴⁹ found that 94% of the teachers involved reported outdoor learning leading to a greater understanding of nature.

Teachers from the Outdoor Classroom Day survey said that after playing and learning outdoors:

‘Children are more connected to nature and have a deeper respect for nature and looking after it.’ (Teacher in Australia)

‘[They have] Connectedness with the community and an increased interest in sustainability; we had a coordinated recycling effort this year, and children studied the trash and what we could do to recycle more efficiently and effectively.’ (Teacher in the US)

‘Children are developing connection to country’ (Teacher in Australia)

‘[They are developing] Stewardship for where they play.’ (Teacher in Canada)

‘They have an appreciation for the natural environment – from head to heart to hand (learning, appreciating and taking action for conservation)’ (Teacher in South Africa)

‘Students learn to love and respect their surroundings as well as each other.’ (Teacher in India)

In her book *Kith*¹⁵⁰ Jay Griffiths writes of the ‘beginning of belonging, the beginning of love’ as she describes how children become emotionally invested in the features of land; a process that mirrors the way we invest emotionally in relationships¹⁵¹. We can all recall the ‘playful geography’ of our childhoods, the islands that loomed large, the lines of marching ants observed for hours, the favourite tree we would climb or sit under.

140 <http://www.play-o-logy.com/research/stuart-lester>

141 Gray, T., (2013).

142 Lester & Russell, (2008).

143 Stixrud & Johnson, (2018); Robinson & Aronica, (2018).

144 Rudolph et al., (2005); Stixrud & Johnson, (2018).

145 Gray, P., (2011).

146 Louv, (2008); Dowdell, Gray & Malone, (2011); Williams, (2017); Ballantyne & Packer, (2009).

147 Packer (1999) in Ballantyne & Packer, (2009).

148 See Section 2 of this report

149 Waite et al, (2016).

150 Griffiths, (2013).

151 Griffiths, (2013) p.3.

The global Nature For All¹⁵² movement, backed by the IUCN, is working with the Children and Nature Network to synthesize the evidence linking connectedness with nature to pro-conservation behaviours. They agree that regular connection, especially at a young age, leads to greater consideration for the planet's resources. They also agree that this connection:

*'...can take many forms, and occur in many ways. It requires places and spaces for people to connect with nature's richness and complexity from backyards to apartment rooftops, on city streets and rural roadways, on school grounds and in urban neighborhoods, from wild protected areas to public urban spaces.'*¹⁵³

In Tim Gill's 2014 literature review *The benefits of children's engagement with nature*¹⁵⁴ he found that the most robust studies indicate that more playful interventions – free play or playful learning – are more likely to result in greater concern for the environment and connection to nature, while less playful interventions are most effective for building scientific knowledge.

There are opportunities throughout the school day, as well as before and after school where children can experience nearby nature and develop a sense of place – experiences which, as Richard Louv points out in *Last Child in the Woods*¹⁵⁵ are becoming ever more rare, despite our larger social concern about the impact of human behaviour upon the environment.

In Switzerland, 75% of children walk to school independently¹⁵⁶ from the ages of 4 or 5, rising to almost 100% by 9 or 10. Schools enforce this because they explicitly recognise the value of the walk to school as physical exercise; a chance to make and develop friendships; and a means to cultivate a stronger connection to place. In the UK, around only 7% of 8-year-olds travel to school independently, rising to about 54% at the age of 10¹⁵⁷. In Australia, there is evidence that cycling and walking levels are reducing¹⁵⁸ and a recent comparison of independent mobility between the UK and Australia¹⁵⁹ found that Australian children are even less likely to walk or cycle independently to school than their peers in the UK.

Greening school yards and increasing playtime, as well as identifying nearby nature – bush areas, woods and parks – where children can regularly play and have lessons outdoors can also increase their connection to a place they can learn to love and later want to protect.

The Australian Government, alongside several other governments worldwide, has embedded learning outdoors and play in the national curriculum, but there is a lot to do to make this a reality in every school. The latest Planet Ark report¹⁶⁰ quite rightly says:

'The more time you spend in nature and the more connected you feel to your community, the happier you are.'

At the same time, they go on to report that 3 in 4 Australians say they are not spending enough time in nature.

In the UK a recent survey found that 35% of parents think that a day of outdoor play is just as important as a day at school¹⁶¹, and yet Natural England's *Monitoring Engagement with the Natural Environment* research showed that while 50% of visits to parks and green spaces are with dogs, less than 10% are with children¹⁶².

'Most (parents) are enthusiastically supportive. A small group are less so, however we see it as an important part of our jobs to communicate and educate our families about the benefits of outdoor learning- explaining the 'why' of what we do.' (Teacher in Australia)

2.6 Getting outdoors makes us happy

'To be honest, the students love it.' (Teacher in Australia)

Children play because it's fun. And because it's fun, they keep playing. Play – real play – is always for its own sake. But it is far more than mere indulgence; it is essential to children's health, wellbeing and learning. It is part of a good childhood.

It seems almost self-evident that playing is joyful. But often it seems less than self-evident that joy is not just a pleasant and diverting part of a balanced childhood, it is essential. If children aren't having fun, if they are stressed over extended periods of time, the consequences for their emotional and mental health in the longer term are severe. Stressed children are more anxious, are less likely to take risks in their learning and fare worse at problem-solving. Most importantly of all, play brings happiness into children's lives, gives them something to live for and improves their quality of life drastically¹⁶³.

One of the striking findings of the Outdoor Classroom Day 2017 survey was how much agreement there was that children were happier after playing outside or while taking lessons outdoors. Even in bad weather, being outdoors – as long as we are dressed for the weather – simply makes us feel alive, feel joy.

Feeling joy on a regular basis is an essential foundation for a good childhood¹⁶⁴ and healthy later life.

152 <http://natureforall.global/>

153 Children and Nature Network, (2018).

154 Gill, (2014).

155 Louv, (2008).

156 https://www.swissinfo.ch/eng/society/cultural-difference-_children-more-likely-to-walk-to-school-in-switzerland/43566390

157 Carver et al, (2013), p468.

158 Carver et al (2013), p463.

159 Carver et al, (2013).

160 Planet Ark, (2018) p7.

161 Microsoft, (2018).

162 Hunt et.al, (2016).

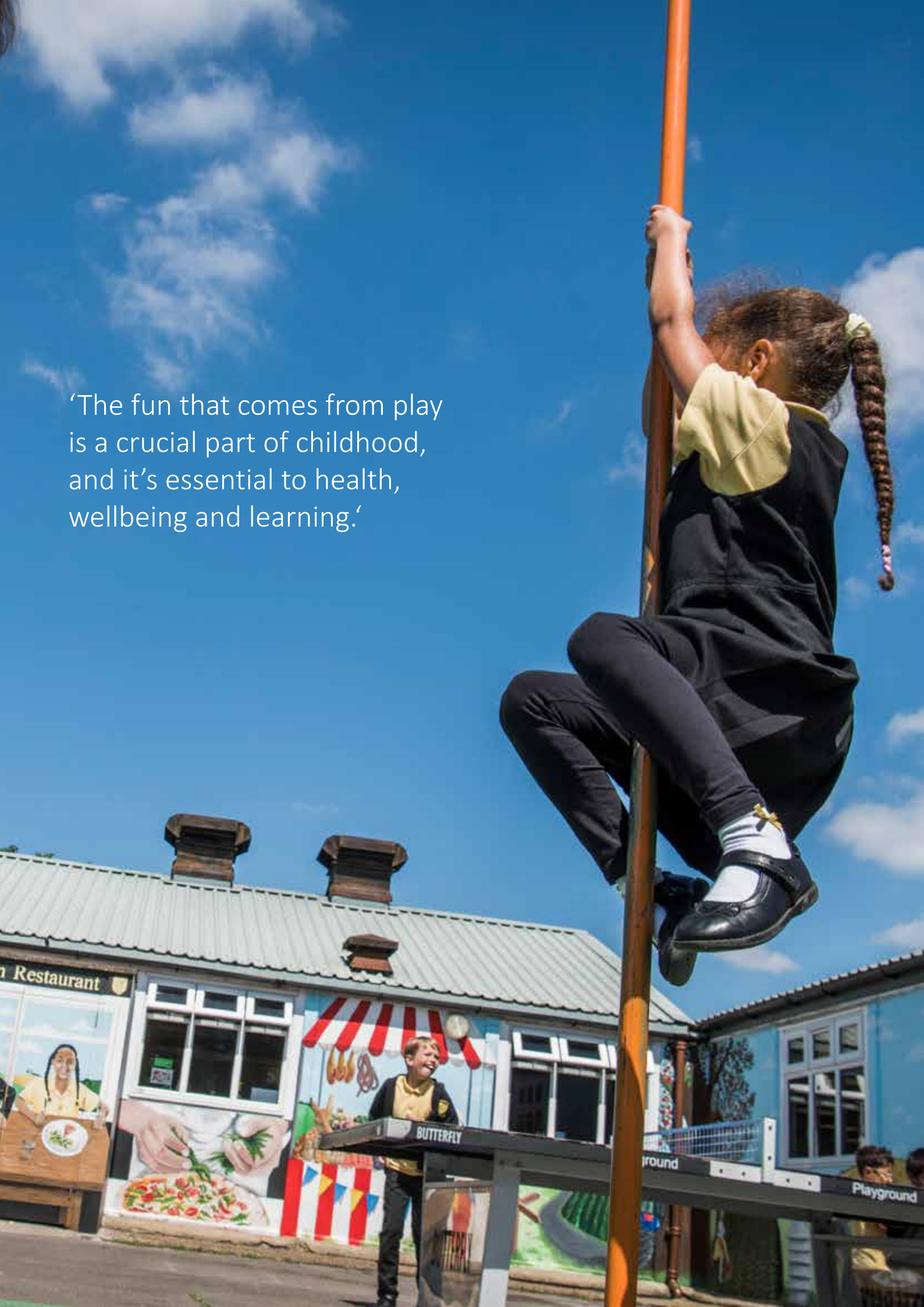
163 Lester & Russell, (2010).

164 Stixrud & Johnson, (2018).

Children play because it's
fun. And because it's fun,
they keep playing



‘The fun that comes from play
is a crucial part of childhood,
and it’s essential to health,
wellbeing and learning.’



3 Schools as influencers: making outdoor learning and play part of every child's life

'At first, parents here did not appear to understand and appreciate the value in outdoor learning. However, once they began to see changes in their children such as eating and sleeping better, eager to get to school and sharing stories of the day's events, parents were on board.'

Teacher from Australia, Outdoor Classroom Day Survey

Over 90% of all children worldwide are in some form of schooling¹⁶⁵. The Global Goal is for all children to have access to quality education by 2030¹⁶⁶. In Australia, as in most of the world, all children are in education (or being home-schooled), with two thirds in government schools¹⁶⁷.

As a collective group, schools have a huge reach and the potential to not only shape the way that children think about the outdoors, but their parents' thinking too.

Globally, 93% of parents agree that children's learning would suffer without opportunities to play, and 95% say that, without play, children cannot reach their full potential¹⁶⁸. Survey after survey in Australia, the US, the UK and around the world report that parents value play and outdoor learning; teachers see the benefits, children love it and in some countries at least – Australia being one of them – governments specifically support time outdoors for children's health, wellbeing and better education.

We hope this review demonstrates that outdoor learning and play have a huge range of benefits for children.

We know that lessons learnt outdoors are simply more memorable. Outdoor learning and play creates healthier kids, who can come to school more often, can concentrate better, physically sit at their desks for longer, can see better and can learn more¹⁶⁹. Active free play is critical in helping children develop balance, co-ordination and improved motor fitness¹⁷⁰. Getting outdoors helps children feel calmer, process their day and children who are outdoors in nearby spaces often love their environment and grow up wanting to protect it¹⁷¹.

We also know that we protect what we love, and we love what we know deeply and intimately. Distant mountains make for great adventures, but every day and often is the recipe for nurturing tomorrow's eco-warriors.

In conclusion, schools are extremely well placed to not only make use of the outdoors to improve engagement with learning and foster a love of the environment; they can act as beacons, highlighting the importance of getting outdoors regularly to parents and the wider community.

Schools, by sending a clear message that getting outdoors is important to children's wellbeing and development, can help make outdoor learning and play part of every child's life.

It's now time for every school, every parent and every politician to back this move and make outdoors time – for learning and for play – just a normal part of every Australian child's day.

Now that would be a victory for common sense.

Get involved in Outdoor Classroom Day Australia and find out more about the campaign by visiting:
<https://outdoorclassroomday.com.au/>

165 UNESCO, World Data on Education, Seventh edition (2010/11).

166 <https://www.globalgoals.org/4-quality-education>

167 <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4221.0>

168 Edelman Intelligence, (2016).

169 Langford et al (2014), Brussoni et al, (2015); Robinson & Aronica, (2018); Strauss & Hanscom, (2014).

170 Fjørtoft 2001, (2004).

171 Louv, (2008); Gill, (2014).

4 Bibliography

- Active Healthy Kids Australia (2016) *Physical literacy: Do our kids have all the tools? 2016 report card on physical activity for children and young people*. Adelaide, Australia: Active Healthy Kids.
- Baines, E. & Blatchford, P. (2011). Children's games and playground activities in school and their role in development. In A. D. Pellegrini (Ed.), *The Oxford Handbook of the Development of Play*. New York: Oxford University Press.
- Ballantyne, R. and Packer, J. (2009). Introducing a fifth pedagogy: Experience-based strategies for facilitating learning in natural environments. *Environmental Education Research*, 15(2), pp.243-262.
- Barros, R. M., Silver, E. J., & Stein, R. E. (2009). School recess and group classroom behavior. *Pediatrics*, 123(2), 431-436.
- Beard, M. (2016). Key note speech at the Education Committee conference: 'The purpose and quality of education in England' download from: <https://www.parliament.uk/documents/commons-committees/Education/Keynote-speech-from-Professor-Mary-Beard-Education-Committee-conference-13-September-2016.pdf> [Accessed 11/9/17]
- Beresin, A. (2016). Playing with time: towards a global survey of recess practices. *International Journal of Play*, 5(2), 159-165.
- Beunderman, J. (2010). *People Make Play. The impact of staffed play provision on children, families and communities*, London: NCB/Play England/Demos.
- Blatchford, P. and Baines, E. (2006). *A Follow Up National Survey of Break times in Primary and Secondary Schools: Final Report to Nuffield Foundation*, November 2006. Institute of Education.
- Bond, D. (2013). *Project Wild Thing* [Motion Picture].
- Brown, S., (2008). *Play Is More Than Just Fun*. TED, TED Talk. Accessed at: <http://tedtalkspsychology.com/play-is-more-than-just-fun-with-stuart-brown/> [Accessed on 12/10/17].
- Brown, S.L. (2009). *Play: How it shapes the brain, opens the imagination, and invigorates the soul*. Penguin.
- Brussoni, M., Gibbons, R., Gray, C., Ishikawa, T., Sandseter, E.B.H., Bienenstock, A., Chabot, G., Fuselli, P., Herrington, S., Janssen, I. and Pickett, W. (2015). What is the relationship between risky outdoor play and health in children? A systematic review. *International Journal of Environmental Research and Public Health*, 12(6), pp.6423-6454.
- Brussoni, M., Olsen, L., Pike I., & Sleet D. (2012). Risky Play and Children's Safety: Balancing Priorities for Optimal Child Development. *International Journal of Environmental Research and Public Health*.
- Carver, A., Watson, B., Shaw, B., and Hillman, M. (2013) A comparison study of children's independent mobility in England and Australia. *Children's Geographies* 11, no. 4: 461-475.
- Centers for Disease Control and Prevention (2010). *The association between school based physical activity, including physical education, and academic performance*. Atlanta, GA: US Department of Health and Human Services, 9.
- Centre on the Developing Child, Harvard University, Brain Architecture link: <https://developingchild.harvard.edu/science/key-concepts/brain-architecture/> [Accessed 8 August 2018]
- Chabon, M. (2009). *Manhood for amateurs: The wilderness of childhood*. The New York Review of Books, 56(12), pp.17-18. link: <https://www.nybooks.com/articles/2009/07/16/manhood-for-amateurs-the-wilderness-of-childhood/> [Accessed 5 August 2018]
- Chatterjee, S. (2017). *Access to Play for Children in Situations of Crisis*. International Play Association.
- Chatterjee, S. (2015). Landscapes of Play. *My Liveable City: The Art and Science of it* [Magazine. Mimeo].
- Chawla, L., Keena, K., Pevec, I., & Stanley, E. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health & place*, 28, 1-13.
- Children and Nature Network, (2018). *Home to us all: How Connecting with Nature Helps Us Care for Ourselves and the Earth (DRAFT)*, Nature for All / IUCN / Children and Nature Network Link: <http://natureforall.global/why> [Accessed 18 August 2018].
- Coffino, J. (2017). *The Power of Policy: Changing the Anji County Educational Ecology* Medium link: <https://medium.com/@AnjiPlay/the-power-of-policy-changing-the-anji-county-educational-ecology-36bd32b68159> [Accessed 5 August 2018].
- Cooper A.R., Page A.S., Wheeler B.W., Hillsdon M., Griew P., Jago R. (2010). Patterns of GPS measured time outdoors after school and objective physical activity in English children: the PEACH project. *International Journal of Behavioural Nutrition and Physical Activity*, 22;7:31.

- Cunningham, H. (2012). *The Invention of Childhood*. Random House.
- Dadvand, P., Nieuwenhuijsen, M.J., Esnaola, M., Forn, J., Basagaña, X., Alvarez-Pedrerol, M., Rivas, I., López-Vicente, M., Pascual, M.D.C., Su, J. and Jerrett, M. (2015). *Green Spaces And Cognitive Development In Primary Schoolchildren*. Proceedings of the National Academy of Sciences.
- Danks, S.G. (2010). *Asphalt to ecosystems: Design ideas for schoolyard transformation*. New Village Press.
- Dillon, J. and Dickie, I. (2012). Learning in the Natural Environment: Review of social and economic benefits and barriers. *Natural England Commissioned Reports*, 92.
- Dowdell, K., Gray, T. and Malone, K. (2011). Nature and its influence on children's outdoor play. *Australian Journal of Outdoor Education*, 15(2), pp.24-35.
- Duncan, S. and McPhee, J. (2015). *The State of Play Survey Executive Report* Human Potential Centre, AUT University & Persil.
- Edelman Intelligence, 2016. *Dirt is Good 2.0 Quantitative Study* (Mimeo).
- Elliott, S. and Chancellor, B. (2014). From Forest Preschool to Bush Kinder: An inspirational approach to preschool provision in Australia. *Australasian Journal of Early Childhood*, 39(4), p.45.
- Else, P. (2009). *The Value of Play*. Bloomsbury Publishing.
- Envision Experience 13 (2018). Essential 21st Century Skills for Today's Students. Link: <https://www.envisionexperience.com/blog/13-essential-21st-century-skills-for-todays-students> [Accessed 18 February 2018]
- Evans, J. (2007). *Whatever happened to playtime? (Are organised games during recesses and lunch breaks necessary?)*. Education Research and Perspectives, 34(1), p.198.
- Fjørtoft, I. (2004). Landscape as playscape: The effects of natural environments on children's play and motor development. *Children Youth and Environments*, 14(2), 21-44.
- Follett, M. (2017). *Creating Excellence in Primary School Playtimes: How to Make 20% of the School Day 100% Better*. Jessica Kingsley Publishers.
- French, A.N., Ashby, R.S., Morgan, I.G. and Rose, K.A. (2013). Time outdoors and the prevention of myopia. *Experimental eye research*, 114, pp.58-68.
- Furedi, F., & Bristow, J. (2012). *The Social Cost of Litigation*. Centre for Policy Studies.
- Gheaus, A. (2015). Unfinished adults and defective children: On the nature and value of childhood. *Journal of Ethics and Social Philosophy*, 9, p.i.
- Gill, T. (2014). The benefits of children's engagement with nature: A systematic literature review. *Children Youth and Environments*, 24(2), pp.10-34.
- Gill, T. (2014). *The Play Return: A Review of the Wider Impact of Play Initiatives*. Children's Play Policy Forum.
- Gill, T. (2011). *Sowing the Seeds, Reconnecting London's children with nature*. London Sustainable Development Commission.
- Gill, T. (2007). *No Fear. Growing up in a risk averse society*. Calouste Gulbenkian Foundation.
- Gleave, J. (2009). *Children's time to play: A literature review*. London: Play England.
- Gleave, J., and Cole-Hamilton, I. (2012). *A World Without Play: A Literature Review*. London: Play England.
- Gopnik, A. and Bonawitz, E. (2015). Bayesian models of child development. *Wiley interdisciplinary reviews: cognitive science*, 6(2), pp.75-86.
- Gopnik, A. (1996). The scientist as child. *Philosophy of Science*, 63, 4, 485-514.
- Gray, P. (2016). The Culture of Childhood: We've Almost Destroyed It. *E-Journal of Psychology Today: Freedom to Learn*. Link: <https://www.psychologytoday.com/blog/freedom-learn/201610/the-culture-childhood-we-ve-almost-destroyed-it> [Accessed 18 February 2018].
- Gray, P. (2013). *Free to Learn: Why Unleashing the Instinct to Play Will Make Our Children Happier, More Self-reliant, and Better Students for Life*. Basic Books.
- Gray, P. (2011). The Decline of Play and the Rise of Psychopathology in Children and Adolescents. *American Journal of Play*, 3(4), pp.443-463.

- Gray, T. and Martin, P. (2012). The role and place of outdoor education in the Australian National Curriculum. *Journal of Outdoor and Environmental Education*, 16(1), p.39.
- Gray, T. (2013). Overcoming Ecophobia. *Wildlife Australia*, 50(4), p.42.
- Griffiths, J. (2013). *Kith: The Riddle of the Childscape*. Penguin UK.
- Haslehurst-Mackenzie, C. (2018). School Streets scheme spreads to two more Hackney schools *East London Lines*. Link: <http://www.eastlondonlines.co.uk/2018/02/school-streets-scheme-spreads-two-hackney-schools/> [Accessed 8 February 2018].
- Herrington, S., & Brussoni, M. (2015). Beyond Physical Activity: the Importance of Play and Nature-based Play Spaces for Children's Health and Development. *Current Obesity Reports*, 4(4), 477-483.
- Huizinga, J. 2017 (1944). *Homo Ludens: A Study of the Play Element in Culture*. (English translation) Routledge.
- Hunt, A., Stewart, D., Burt, J., Dillon, J. and Joy, J. (2016). Monitor of Engagement with the Natural Environment: A Pilot to Develop an Indicator of Visits to the Natural Environment by Children—Results from Years 1 and 2 (March 2013 to February 2015). *Natural England Commissioned Reports*, (208).
- Isdale, D. (21.10.14). Channel SBS Australia No Rules School link: <https://www.sbs.com.au/news/dateline/story/no-rules-school> [Accessed 10 February 2018].
- Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 40.
- Jarrett, O.S. (2013). *A Research-based Case for Recess*. US Play Coalition
- Jones, L.A., Sinnott, L.T., Mutti, D.O., Mitchell, G.L., Moeschberger, M.L. and Zadnik, K. (2007). Parental history of myopia, sports and outdoor activities, and future myopia. *Investigative Ophthalmology & Visual Science*, 48(8), pp.3524-3532.
- Juster, T. F., Stafford, F., & Ono, H. (2004). *Major changes have taken place in how children and teens spend their time: Child development supplement*. Ann Arbor, MI: Institute for Social Research, University of Michigan.
- Kellert, S. (8 April 2013). Children, nature and the future of our species in 21st Century Learning Blog, Western Sydney University. Link: <http://learning21c.wordpress.com/2013/04/08/children-nature-and-the-future-of-our-species/> [Accessed 18 August 2018].
- Kellock, P. (2015). The Case for Play. *Playground Ideas*. Link: <https://www.playgroundideas.org/wp-content/uploads/The-case-for-play-V5.pdf> [Accessed 5 February 2018].
- Kuo, F. E., & Faber Taylor, A. (2004). A Potential Natural Treatment for Attention-deficit/Hyperactivity Disorder: Evidence from a National Study. *American Journal of Public Health*, 94(9), 1580-1586.
- Kuo, M., Browning, M.H. and Penner, M.L. (2017). Do Lessons in Nature Boost Subsequent Classroom Engagement? Refuelling Students in Flight. *Frontiers in Psychology*, 8.
- Langford R, Bonell C.P., Jones H.E., Poulou T., Murphy S.M., Waters E., Komro K.A., Gibbs L.F., Magnus D., Campbell R. (2014). The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement. *Cochrane Database of Systematic Reviews* 2014, Issue 4. Art. No.: CD008958.
- Lee, A.C. and Maheswaran, R. (2011). The health benefits of urban green spaces: a review of the evidence. *Journal of Public Health*, 33(2), pp.212-222.
- Lee, I., Where joy hides and how to find it. TED. In Monika O, 1 August 2018 Are We Neglecting the Joy in Early Childhood Settings? Medium. link: <https://medium.com/@monikaobermeier/are-we-neglecting-the-joy-in-early-childhood-settings-639e547256eb> [Accessed 6 August 2018]
- Lester, S. and Russell, W. (2008). *Play for a Change*. London: National Children's Bureau / Play England.
- Lester, S. and Russell, W. (2010). Children's Right to Play: An Examination of the Importance of Play in the Lives of Children Worldwide. *Working Papers in Early Childhood Development*, No. 57. Bernard van Leer Foundation. PO Box 82334, 2508 EH, The Hague, The Netherlands.
- Lester, S. and Russell, W. (2014). Turning the World Upside Down: Playing as the Deliberate Creation of Uncertainty. *Children*, 1(2), pp.241-260.
- Lester, S., Jones, O., and Russell, W. (2011). *Supporting School Improvement through Play: An Evaluation of South Gloucestershire's Outdoor Play and Learning Programme*. London: National Children's Bureau.
- Li, Q., 2010. Effect of forest bathing trips on human immune function. *Environmental Health and Preventive Medicine*, 15(1), p.9.

- Lloyd, A.M., 2016. *Place-based outdoor learning enriching curriculum: a case study in an Australian primary school* (Doctoral dissertation, Western Sydney University, Australia).
- Louv, R. (2008). *Last Child in the Woods: Saving our Children from Nature-deficit Disorder*. Algonquin Books.
- Louv, R. (2012). *The Nature Principle: Reconnecting with Life in a Virtual Age*. Algonquin Books.
- Lovell, R. (2016). *Links between natural environments and learning: evidence briefing*. Natural England.
- MacBeath, J., Armstrong, I., Harlen, W., Alexander, R., Flutter, J., Hargreaves, L., Harrison, D., Hartley-Brewer, E., Kershner, R., Mayall, B. and Northen, S. (2009). *Children, their world, their education: Final report and recommendations of the Cambridge Primary Review*. Routledge.
- Maller, C., Townsend, M., Pryor, A., Brown, P. and St Leger, L. (2006). Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations. *Health Promotion International*, 21(1), pp.45-54.
- Malone, K. and Tranter, P.J. (2003). *Children's Environments: A Study of Children's Environmental Learning in Relation to their Schoolground Experiences*. RMIT University.
- Malone, K. and Waite, S. (2016). *Student Outcomes and Natural Schooling: Pathways from Evidence to Impact Report 2016*. [Aus&UK]
- Mathiasen, L. (2014). Prevention is Better than Cure: A Hands-On, Play-Based, Innovative, Health and Well-Being Program in Remote Australia. *Children*, 1(3), pp.318-338.
- McCree, M., Cutting, R. and Sherwin, D. (2018). The Hare and the Tortoise go to Forest School: taking the scenic route to academic attainment via emotional wellbeing outdoors. *Early Child Development and Care*, 188(7), pp.980-996.
- McGurk, L.Å. (2017). *There's No Such Thing as Bad Weather: A Scandinavian Mom's Secrets for Raising Healthy, Resilient, and Confident Kids (from Friluftsliv to Hygge)*. Simon and Schuster.
- Michalos, A.C. (2017). Education, happiness and wellbeing. In *Connecting the Quality of Life Theory to Health, Well-being and Education* (pp. 277-299). Springer, Cham.
- Microsoft, 23 August 2018. Creativity and imagination just as important as numeracy and literacy for kids, say UK parents Link: <https://news.microsoft.com/en-gb/2018/08/23/creativity-and-imagination-just-as-important-as-numeracy-and-literacy-for-kids-say-uk-parents/> (accessed 23 August 2018) (additional data supplied Mimeo)
- Mission Australia & The Black Dog Institute (2017). *The Five Year Mental Health Youth Report: Youth Survey 2012 – 16* Link: <https://www.missionaustralia.com.au/documents/research/young-people-research/706-five-year-mental-health-youth-report> [Accessed 15 August 2018]
- Moss, S.M. (2012). *Natural Childhood*. London: National Trust.
- Murray, R., Ramstetter, C., Devore, C., Allison, M., Ancona, R., Barnett, S., Gunther, R., Holmes, B.W., Lamont, J., Minier, M. and Okamoto, J. (2013). The Crucial Role of Recess in School. *Pediatrics*, 131(1), pp.183-188.
- National Children's Bureau (2013). *Greater Expectations: Raising Aspirations for Our Children*. London: National Children's Bureau.
- Nature Play SA (2017). Learning Outdoors Risks and Benefits Government of South Australia link: <https://natureplaysa.org.au/educators/play-space-design/> [Accessed 15 August 2018]
- New South Wales Government (2016). *The School Day: Fact Sheet* link: https://beta.dec.nsw.gov.au/__data/assets/pdf_file/0006/264795/The-School-Day-Fact-Sheet-October-2016.pdf [Accessed 31 August 2018]
- OECD (2017). Are students happy?: PISA 2015 results: students' well-being, *PISA in Focus*, No. 71, OECD Publishing, Paris. Link: <https://doi.org/10.1787/3512d7ae-en> [Accessed 10 August 2018]
- Office for National Statistics (UK) (2018). *Children's engagement with the outdoors and sports activities, UK: 2014 to 2015. Analysis of the UK Time Use Survey to provide insight into the amount of time children spend engaging with the outdoors and sports activities*. (online) Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/childrensengagementwiththeoutdoorsandsportsactivitiesuk/2014to2015#main-points> [Accessed 10 February 2018]
- Oliver, M. (2016). *Upstream: Selected Essays*. Penguin.
- Omigbodun, O.O. and Belfer, M.L. (2016). *Building research capacity for child and adolescent mental health in Africa*.- <https://capmh.biomedcentral.com/articles/10.1186/s13034-016-0119-2>
- Palmer, S. (2015). *Toxic Childhood: How the Modern World is Damaging Our Children and What We Can Do About It*. Orion.

Pastor, P.N., Reuben, C.A. Attention deficit disorder and learning disability: United States, 1997–98. *Vital Health Stat* 10. 2002;No. 206:1–18.

Patalay, P. & Fitzsimons, E. (2017). *Mental ill-health among children of the new century: trends across childhood with a focus on age 14*. September 2017. Centre for Longitudinal Studies: London

Pellegrini, A.D., Blatchford, P. and Baines, E. (2015). *The child at school: Interactions with peers and teachers*. Routledge.

Perraudin, F. (2018). *High expectations – how one primary school went from failing to outstanding* in The Guardian (Online) Available at: https://www.theguardian.com/education/2018/feb/10/educating-parents-outstanding-evelyn-street-primary-school-warrington?CMP=Share_iOSApp_Other [accessed 18 February 2018].

Pisa (2015). *PISA Wellbeing Results Volume III, 2015*. Link: <http://www.oecd.org/pisa/publications/pisa-2015-results-volume-iii-9789264273856-en.htm> [Accessed 17 February 2018].

Planet Ark (2018). *Connect in Nature: The role of technology in spending time in nature* Planet Ark.

Planet Ark (2017). *Learning from Trees: Life Lessons for Future Generations*. Planet Ark.

Planet Ark (2011). *Climbing trees: Getting Aussie kids back outdoors*. Planet Ark.

Play Wales, (2015). *Building Resilience – the importance of playing* Play Wales.

Playwork Principles Scrutiny Group, Cardiff (2005). *Playwork Principles*.

Prezza, M., Pilloni, S., Morabito, C., Sersante, C., Alparone, F. R and Giuliani, M.V. (2001). The influence of Psychosocial and Environmental Factors on Children's Independent Mobility and Relationship to Peer Frequentation. *Journal of Community & Applied Social Psychology* 11 (6): 435–450.

Rees, G., Andresen, S. and Bradshaw, J.R. (2016.) *Children's Views on Their Lives and Well-being in 16 Countries: A report on the Children's Worlds survey of children aged eight years old 2013-15*. Jacobs Foundation.

Resnick M. (2017). *Lifelong Kindergarten: Cultivate Creativity Through Projects, Passion, Peers, and Play*. Cambridge, MA: MIT Press.

Rhea D.J. (2015). *Why young kids need less class time — and more play time — at school*. Washington Post. link: https://www.washingtonpost.com/news/answer-sheet/wp/2015/08/21/why-young-kids-need-less-class-time-and-more-play-time-at-school/?utm_term=.a7d4330f950c [Accessed 5 August 2018].

Rhea, D.J. and Rivchun, A.P. (2018), The LiNK Project®: Effects of Multiple Recesses and Character Curriculum on Classroom Behaviors and Listening Skills in Grades K–2 Children. In *Frontiers in Education* (Vol. 3, p. 9). Frontiers.

Richard, L. and Jeffrey, S. (2017). *World Happiness Report 2017*. United Nations: New York.

Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D. and Benefield, P. (2004). *A Review Of Research On Outdoor Learning*. National Foundation for Educational Research. King's College London.

Ridgers, N.D., Fairclough, S.J. and Stratton, G. (2010). Twelve-month effects of a playground intervention on children's morning and lunchtime recess physical activity levels. *Journal of Physical Activity and Health*, 7(2), pp.167-175.

Ripley, A. (2013). *The smartest kids in the world: And how they got that way*. Simon and Schuster.

Robertson, J. 6 August 2018. Upper Sturt Primary – An Outdoor School (Blog). Link: <https://creativestartlearning.co.uk/developing-school-grounds-outdoor-spaces/upper-sturt-primary-an-outdoor-school-grounds-tour/> (Accessed 6 August 2018).

Robbins, J., December 2017. Blindness epidemic inevitable unless children put down iPads and play outside more (Online) *International Business Times*. Link: <http://www.ibtimes.co.uk/blindness-epidemic-inevitable-unless-children-put-down-ipads-play-outside-more-1651410> [Accessed 10 February 2018].

Robinson, K. and Aronica, L. (2018). *You, Your Child and School*. Allen Lane / Penguin Books.

Robinson, K. (2011). *Out of our minds: Learning to be creative*. John Wiley & Sons.

Robinson, K. (2010). Sir Ken Robinson: Bring on the Learning Revolution! TED. Link: https://www.ted.com/talks/sir_ken_robinson_bring_on_the_revolution [Accessed 5 August 2018]

Rose, K.A., Morgan, I.G., Ip, J., Kifley, A., Huynh, S., Smith, W. and Mitchell, P. (2008). Outdoor activity reduces the prevalence of myopia in children. *Ophthalmology*, 115(8), pp.1279-1285.

Roth, J., Brooks-Gunn, J., Linver, M., & Hofferth, S. (2002). *What happens during the school day? Time diaries from a national sample of elementary school teachers*. Teachers College Record.

- Rudolph, K.D., Caldwell, M.S., Conley, C.S. (2005). Need for Approval and Children's Well-Being. *Child Development*. 2005;76(2):309-323.
- Sahlberg, P. (2014). *Finnish Lessons 2.0: What Can the World Learn from Educational Change in Finland?* New York, Teachers College Press.
- Sahlberg, P. (2017). Ch 1 Make Recess the Right of the Child in Sahlberg, P., 2017. *FinnishED Leadership: Four big, inexpensive ideas to transform education*. Corwin Press.
- Sahlberg, P., Aug 2018 Let The Children Play Presentation at 3rd Annual ACEL Early Childhood Conference, Sydney, Australia (Mimeo).
- Sandseter, E. B. H., & Kennair, L. E. O. (2011). Children's Risky Play from an Evolutionary Perspective: The Anti-phobic Effects of Thrilling Experiences. *Evolutionary Psychology*, 9(2), 147470491100900212.
- Schrobsdorff, S., October 26 2016. Teen Depression and Anxiety: Why the Kids Are Not Alright *Time Magazine*. Link: <http://time.com/magazine/us/4547305/november-7th-2016-vol-188-no-19-u-s/> [accessed 5 August 2018].
- Senda, M. (2015). Safety in public spaces for children's play and learning. *IATSS Research*, 38(2), 103-115.
- Shanahan, D.F., Bush, R., Gaston, K.J., Lin, B.B., Dean, J., Barber, E. and Fuller, R.A. (2016). Health benefits from nature experiences depend on dose. *Scientific Reports*, 6, p.28551.
- Sharif, S. (2014). School playground: Its impact on children's learning and development. *Asia-Pacific Regional Network for Early Childhood*, 8, 17-19.
- Shaw, B., Fagan-Watson, B., Frauendienst, B., Redecker, A., Jones, T. and Hillman, M. (2013). *Children's independent mobility: a comparative study in England and Germany (1971-2010)*.
- Shuayb, M. and O'Donnell, S. (2008). *Aims and Values in Primary Education: England and other countries*.
- Simone, M.F., 2002. Back To The Basics: Student Achievement And Schoolyard Naturalization. Trent University. Peterborough, Ontario.
- Singer, D. G., Singer, J. L., D'Agostino, H., & DeLong, R. (2009). Children's Pastimes and Play in Sixteen Nations: Is Free-Play Declining? *American Journal of Play*, 1(3), 283-312.
- Smith, G.A. and Sobel, D. (2014). *Place- and Community-based Education in Schools*. Routledge.
- Smith, P.K. (2009). *Children and play: understanding children's worlds (Vol. 12)*. John Wiley & Sons.
- Sobel, D. (2004). *Place-based education*. Great Barrington, MA: The Orion Society.
- Spinka, M., Newberry, R. and Bekoff, M. (2001). Mammalian Play: Training For The Unexpected *The Quarterly Review of Biology*. The University of Chicago Press.
- Stixrud, W. and Johnson, N. (2018). *The Thriving Child: The Science Behind Reducing Stress and Nurturing Independence*. Penguin UK.
- Strauss, V. & Hanscom, A., 8 July 2014. Why so many kids can't sit still in school today, Washington Post link: https://www.washingtonpost.com/news/answer-sheet/wp/2014/07/08/why-so-many-kids-cant-sit-still-in-school-today/?utm_term=.7ab807e4033f [Accessed 2 September 2018].
- Sutton-Smith, B. (2009). *The Ambiguity of Play*. Harvard University Press.
- Sznitman, S.R., Reisel, L. and Romer, D. (2011). The neglected role of adolescent emotional well-being in national educational achievement: Bridging the gap between education and mental health policies. *Journal of Adolescent Health*, 48(2), pp.135-142.
- The Black Dog Institute, [Date Not Confirmed]]. Depression in adolescents & young people Factsheet. Link: <https://www.blackdoginstitute.org.au/docs/default-source/factsheets/depressioninadolescents.pdf?sfvrsn=2> [Accessed 5 August 2018]
- Townsend, M. and Weerasuriya, R. (2010). *Beyond Blue to Green: The benefits of contact with nature for mental health and well-being*. Melbourne, Australia: Beyond Blue Limited.
- Tremblay, M.S., Barnes, J.D., González, S.A., Katzmarzyk, P.T., Onywera, V.O., Reilly, J.J., Tomkinson, G.R. and Global Matrix 2.0 Research Team (2016). Global Matrix 2.0: Report Card Grades On The Physical Activity Of Children And Youth Comparing 38 Countries. *Journal of Physical Activity And Health*.
- Ulset, V., Vitaro, F., Brendgen, M., Bakkus, M., Borge, A.I.H. (2017). Time spent outdoors during preschool: Links with children's cognitive and behavioral development. *Journal of Environmental Psychology*.

UNESCO, World Data on Education, Seventh edition 2010/11 Link: <http://www.ibe.unesco.org/en/document/world-data-education-seventh-edition-2010-11> [Accessed 20 September 2017].

van Dijk-Wesselius, J.E., Maas, J., Hovinga, D., van Vugt, M. and van den Berg, A.E., (2018). The impact of greening schoolyards on the appreciation, and physical, cognitive and social-emotional well-being of schoolchildren: A prospective intervention study. *Landscape and Urban Planning*, 180, pp.15-26.

Veitch, J., Bagley, S., Ball, K., & Salmon, J. (2006). Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health & Place*, 12(4), 383-393.

Verstraete, S. J., Cardon, G. M., De Clercq, D. L., & De Bourdeaudhuij, I. M., 2006. Increasing children's physical activity levels during recess periods in elementary schools: the effects of providing game equipment. *European Journal of Public Health*, 16(4), 415-419.

Vygotsky, L.S. (1967). Play and its role in the mental development of the child. *Soviet Psychology*, 5(3), pp.6-18.

Vygotsky, L.S. (1986). *Thought and Language* (rev. ed.).

Waite, S., Passy, R., Gilchrist, M., Hunt, A. and Blackwell, I. (2016). *Natural Connections Demonstration Project, 2012–2016: Final Report*. Natural England Commissioned Reports.

Wang, J (Ed)., Dec 2017. The Wonders of Outdoor Education SingTeach Link: <http://singteach.nie.edu.sg/wp-content/uploads/2018/01/SingTeach-Issue-63.pdf> [Accessed 8 February 2018].

Wang, Y., and Lobstein, T. I. M. (2006). Worldwide trends in childhood overweight and obesity. *Pediatric Obesity*, 1(1), 11-25.

Weir, L. A., Etelson, D., & Brand, D. A. S. (2006). Parents' perceptions of neighborhood safety and children's physical activity. *Preventive Medicine*, 43(3), 212.

White, R., 2004. Interaction with nature during the middle years: Its importance to children's development and nature's future. Link: <https://www.whitehutchinson.com/children/articles/nature.shtml> [Accessed 8 February 2018].

Whitebread, D. (2012). *The Importance of Play*. University of Cambridge.

Williams, F. (2017). *The Nature Fix: Why nature makes us happier, healthier, and more creative*. WW Norton & Company.

Williams, S. Wright, H. & zu Dohna, F. (2017). *Cities Alive: Designing for Urban Childhoods*. London: Arup.

Woodyer, T. (2018). Towards playful urban futures? Animating, experimenting and participating in the city as playground. Accessed at: <https://materialsensibilities.wordpress.com/2018/01/17/call-for-papers-towards-playful-urban-futures-animating-experimenting-and-participating-in-the-city-as-playground/> [Accessed 6 February 2018].

World Health Organisation, (Date Not Clear). Key Facts: Physical activity Accessed 11/2/18 Link: <http://www.who.int/mediacentre/factsheets/fs385/en/>

World Health Organization (WHO) (2008). Children Are Not Little Adults- Children's Health and the Environment WHO Training Package for the Health Sector (online) Link: http://www.who.int/ceh/capacity/Children_are_not_little_adults.pdf [Accessed 10 February 2018].

Yampio, N.2 August 2018. Look up from your screen Aeon link: <https://aeon.co/amp/essays/children-learn-best-when-engaged-in-the-living-world-not-on-screens> [Accessed 6 August 2018.]

Yang, C. K., Kim, J. K., Patel, S. R., & Lee, J. H. (2005). Age-related changes in sleep/wake patterns among Korean teenagers. *Pediatrics*, 115(Supplement 1), 250-256.

Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R.M. and Committee on Psychosocial Aspects of Child and Family Health (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, p.e20182058.

Zosh, J.M., Hirsh-Pasek, K., Hopkins, E.J., Jensen, H., Liu, C., Neale, D., Solis, S.L. and Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in Psychology*, 9.

5 Appendices

5.1 Methodology

Just over 20,000 teachers were involved in Outdoor Classroom Day 2017. All those who agreed to ongoing communication, around 17,000 teachers, were invited to respond to two surveys that together make up the Outdoor Classroom Day 2017 survey. This data was collated by Project Dirt between November 2017 and April 2018 and brings together responses from 713 teachers, (93 of whom were Australian) on learning outdoors and 629 teachers about outdoor play (91 of whom were Australian), from 44 countries.

Within this report 'Global' or 'All Schools' refers to average data across the full data set – including Australia. Data from Australia, the UK, the US and Canada was pulled out for comparison as all these countries had over 90 respondents. The set of data for analysis was further refined when looking at outdoor play to focus solely on the responses from primary schools (that is, children aged 6 to 12; 57 responses from Australia).

To our knowledge, this is the first global survey of this scale asking schools about their attitudes towards, and practice supporting, outdoor play and learning. As valuable as this set of data is, it is only a snapshot of current activity, as we can assume that responses generally came from teachers and schools already predisposed to outdoor learning and play – which means that in the total population children are likely to get far less outdoors time at school.

The survey questions were developed with by the Project Dirt team with input on data analysis from Ed Baines and Helen MacIntyre, of the UCL Institute of Education. They were translated into the languages of the lead countries with support from our partners from non-English speaking countries: Fee Suomi (Finland), Aprendiz (Brazil), Dividendo por Colombia (Columbia), ADEAC (Spain), Movimento Bloom (Portugal), Aktif Yaşam (Turkey), Kerlip (Indonesia) and the Skip team in France.

The survey was conducted by Project Dirt by emailing teachers taking part in Outdoor Classroom Day who had opted in to receiving communications, or mailed to teachers by the lead NGO partners: Fee Suomi (Finland), Aprendiz (Brazil), Dividendo por Colombia (Columbia), ADEAC (Spain), Movimento Bloom (Portugal), Kerlip (Indonesia), Aktif Yaşam (Turkey), Learning Through Landscapes (UK), Nature Play (Australia), Ace Trust (India) and Symphonia for South Africa (South Africa).

All the original data from the Outdoor Classroom Day surveys is owned by Project Dirt, secured as part of the ongoing evaluation to help understand and improve the campaign's effectiveness. This is the first time it has been published in Australia.

To build the research frame for the evidence base, the project team drafted a long list of search terms against the main topics – outdoors as a place to learn, to play and explore; nature and education; outdoors and physical health, mental

health, stress, resilience and happiness. Using this list as a foundation, we built from core classic texts (Vygotsky, Piaget, Bourdieu, Richard Louv etc), through a range of peer-reviewed literature reviews, books and surveys on related topics including:

- risky play
- active play
- outdoor learning
- outdoor education
- nature connectedness
- mental health
- stress
- resilience
- social relationships
- early education and childcare
- skills for the 21st century
- non-cognitive skills
- STEM knowledge
- experiential learning
- active travel
- school and community design
- philosophical treatments of play from the west and east.

We also reference a cross section of grey literature, recognising that some of the more challenging literature has appeared online and in papers such as the New York Times and Washington Post. We present some of the key findings from our consultations with teachers and head teachers that have taken part in Outdoor Classroom Day alongside a breakdown of the lengths of playtime and frequency of learning outdoors.

All the literature reviews note that whilst there are some robust large-scale investigations around effective outdoor pedagogical practice, in particular around outdoor learning; some early years practice; and 'outward bound' adventurous activities, the majority of available literature (in particular about play) is qualitative and small scale. As a rule, the literature is focused on the UK, the US, northern Europe and Australia, with a few studies from other English-speaking countries and some literature about other majority world countries (though often not published in those countries). We have tried to compensate for the lack of peer-reviewed texts with market research, journalism and other literature and we are grateful to all our colleagues who have supported that research.

If you are aware of related research, or would like to discuss the methodology, please contact: info@outdoorclassroomday.com

5.2 Full tables of responses from the Outdoor Classroom Day 2017 survey

A) Countries and total numbers of responses

Ai) Schools that took part – for all but the section on Outdoor Learning

Countries	Number of schools	Countries	Number of schools
Australia	91	Netherlands	1
Canada	148	New Zealand	6
China	1	Nigeria	1
Croatia	2	Philippines	1
Finland	2	Romania	3
Germany	2	Russia	1
Greece	1	Slovenia	1
Hungary	1	South Africa	27
Iceland	1	South Korea	1
India	16	Spain	1
Indonesia	1	Thailand	1
Ireland	15	Turkey	2
Israel	1	UK	176
Latvia	3	United Arab Emirates	1
Malaysia	1	US	119
México	1	All Schools	629

A ii) Schools surveyed about outdoor learning (all primary)

Country	Number of Primary Schools	Country	Number of Primary Schools
Argentina	6	Latvia	3
Australia	93	Lebanon	1
Brazil	27	Macedonia	2
Bulgaria	1	Malta	1
Canada	79	Mexico	1
Chile	1	New Zealand	2
Colombia	1	Pakistan	1
Croatia	4	Poland	1
Finland	18	Portugal	16
Greece	1	Romania	3
Hungary	1	South Africa	11
India	36	Sweden	1
Indonesia	55	Turkey	3
Ireland	12	UK	289
Italy	1	US	42
		All Schools*	713

A iii) Q: When did you first get involved in Outdoor Classroom Day?

Year	Responses	
Before 2016	13.00%	82
2016	21.08%	133
2017	65.93%	416
	Answered	631

B) Play outdoors at school

B i) Do you believe play time outdoors throughout the day is critical for children to reach their full potential?

- 97% of teachers worldwide believe play time outdoors throughout the day is critical for children to reach their full potential
- Australia 99%; Canada 99%; South Africa 96%; UK 99%; US 99%

B ii) Time to play

Q: Length of time for Breaks in Primary + All Through schools

Countries	0-30 minutes	31-59 minutes	60-89 minutes	90+ minutes	Total
Australia Count %	0	24	27	6	57
	0%	42%	47%	11%	100%
Canada Count %	10	59	25	11	105
	10%	56%	24%	10%	100%
UK Count %	7	63	37	9	116
	6%	54%	32%	8%	100%
US Count %	30	37	6	2	75
	40%	49%	8%	3%	100%
All Schools* Count %	51	218	109	37	415
	12%	53%	26%	9%	100%

C) Time to learn outdoors

C i) Frequency of outdoor learning

Countries	Frequency of lessons outdoors				Total schools
	Less than once a month	About once a month	Once a week or more	Every day	
Australia	16	10	53	14	93
	17%	11%	57%	15%	
Canada	14	19	32	14	79
	18%	24%	41%	18%	
UK	35	69	151	34	289
	12%	24%	52%	12%	
US	12	7	19	4	42
	29%	17%	45%	10%	
All Schools	115	152	362	84	713
	16%	21%	51%	12%	

D ii): Which key skills do you think children acquire from playing outdoors?

Countries	Imagination and creativity	Social skills	Improved fine motor and gross motor skills*	Ability to focus on a task*
Australia	85	86	85	61
	98%	99%	98%	70%
Canada	123	128	117	86
	93%	97%	89%	65%
UK	138	144	127	91
	94%	98%	86%	62%
US	100	105	102	78
	92%	96%	94%	72%
All Schools	520	537	501	363
	94%	97%	90%	65%

*never before published globally

C ii) Would you like to take your children outside to learn more often?

Country	No, I think they should learn outside less often	The current amount of time is enough	Yes, I'd like to take them out more	Total responses
Australia		13	74	87
	0%	15%	85%	
Canada		15	120	135
	0%	11%	89%	
UK		29	127	156
	0%	19%	81%	
US		8	102	110
	0%	7%	93%	
All Schools	1	74	500	575
	0%	13%	87%	

D ii): Have children a better understanding of the environment from playing outdoors?

Countries	Yes children have a better understanding of the environment after playing outdoors*
Australia	80
	92%
Canada	116
	88%
UK	122
	83%
US	89
	82%
All Schools	478
	86%

D) Skills and capabilities developed outdoors

D i): Have you noticed any changes in children's attitudes and behaviours when they return to the classroom after playing outdoors? Please select all that apply.

Countries	Ability to concentrate	Engagement in learning	Behaviour	Happiness	Ability to retain information*
Australia	53	68	57	78	52
	62%	77%	65%	89%	59%
Canada	84	107	96	120	80
	63%	80%	72%	90%	60%
UK	109	109	86	125	84
	69%	74%	58%	84%	57%
US	74	85	75	93	72
	68%	77%	68%	85%	65%
All Schools	384	437	371	490	347
	68%	79%	67%	88%	62%

Dii) Q: Have you noticed any changes in children's attitudes and behaviours when taking part in lessons outdoors?

Country	Ability to retain information*	Ability to concentrate	Engagement in learning	Behaviour	Happiness
Australia	42	53	72	55	74
	49%	62%	84%	63%	85%
Canada	79	84	117	88	116
	59%	63%	87%	66%	87%
UK	95	110	141	95	140
	63%	72%	90%	63%	91%
US	67	74	100	73	97
	63%	69%	91%	68%	88%
All Schools	350	385	505	369	508
	62%	68%	88%	65%	89%

*never before published globally

E) Barriers to going outdoors

E i) What stops children playing outdoors?

Country	Poor behaviour during the break*	Catch-up lessons (reading/ literacy/ maths)*	Poor behaviour in class	Finishing classwork or homework
UK	53	20	64	56
	36%	14%	44%	38%
US	21	21	31	26
	19%	19%	28%	24%
Australia	16	7	19	19
	18%	8%	22%	22%
Canada	24	12	35	32
	18%	9%	27%	24%
All schools	123	69	161	155
	22%	12%	29%	28%

E ii) Does the weather stop children playing outdoors?

Country	Weather stops us
UK	112
	76%
US	88
	81%
Australia	71
	82%
Canada	111
	84%
All schools	441
	79%

E iii) Nothing stops children playing outdoors (at school)?

Country	Nothing
Australia	18
	21%
US	7
	6%
UK	24
	16%
Canada	15
	11%
All schools	78
	14%

E iv) Is there anything that stops you from taking lessons outside?

Country	Pressures caused by curriculum work	Health and safety fears	Extra prep involved in taking classes outside*	More difficult to moderate children's behaviour outdoors*	Learning outside is not perceived to be as valuable as learning inside *	Parents' perception that learning outside is not time well spent*
Australia	34	8	16	24	16	10
	39%	9%	18%	28%	18%	11%
US	52	15	29	13	13	2
	47%	14%	26%	12%	12%	2%
UK	70	27	32	15	21	14
	45%	17%	21%	10%	13%	9%
Canada	44	23	27	16	25	14
	33%	17%	20%	12%	19%	10%
All schools	233	87	115	80	86	52
	40%	15%	20%	14%	15%	9%

E v) Does the weather stop you from taking lessons outside?

Country	Weather stops us
Australia	59
	68%
US	85
	77%
UK	90
	58%
Canada	107
	79%
All schools	405
	70%

E vi) Nothing stops you from taking lessons outside?

Country	Nothing
Australia	16
	18%
US	7
	6%
UK	37
	24%
Canada	20
	15%
All schools	99
	17%

G ii) Has the frequency of outdoor lessons at your school increased or decreased since taking part in Outdoor Classroom Day?

	Increased
Canada	57
	42%
USA	45
	41%
UK	59
	38%
Australia	29
	33%
All Schools	257
	44%

F) Would you like to go outdoors more?

F i) Do you think children at your school should have more time to play outside?

- 68% of teachers worldwide think children should play outdoors more. Australia 69%; Canada 84%; South Africa 50%; UK 55%; US 72%

F ii) Q10: Would you like to take your pupils outside more often?

- 87% of teachers worldwide want more time to take lessons outdoors (US 93%; Canada 89%; Australia 85%; South Africa 85%; UK 81%)

G) Impact of Outdoor Classroom Day

G i) Q: Has there been any change in outdoor play since your involvement in Outdoor Classroom Day?

Country	Increased
Australia	16
	18%
Canada	30
	23%
UK	28
	19%
US	18
	17%
All Schools	125
	22%

5.3 Summary of the known consequences of taking learning and play outdoors

Getting outdoors for any reason in (almost) any weather is a key part of a balanced, healthy day.

Getting outdoors, especially in green spaces, increases our oxygen supply, reduces cortisol levels, decreases blood pressure and lowers anxiety levels. We feel calmer and happier and better disposed to the world. Playing outdoors is how we are designed to develop as human beings.

The latest neuroscience research suggests 'attention' is what children learn about outdoors. Wandering in green spaces allows the 'fight or flight' nerves to relax and a 'soft gaze' to develop. Stress reduces, focus increases, children are happier.

While playing in groups, children learn crucial social skills – how to negotiate, how to make friends, how to fall out and make up. While it is possible to develop literacy and numeracy skills later in life, it is harder to learn how to be kind, considerate and how to co-operate without learning these skills in childhood.

Through playing outdoors regularly, children build a firm connection to the environment so are more likely to protect it, and lessons learned outdoors are often more memorable. Schools that respect and encourage children's outdoor play see increased attendance, lower sickness rates and their teachers report being happier too.

Taking lessons outdoors at school is good both for making lessons memorable and for developing wider skills. In summary outdoor lessons support children to:

- understand better the lessons they are learning
- apply learning to the real world
- Increase their knowledge and understanding of the world
- be more creative
- learn to focus in real-world scenarios.

Travelling to school and around their neighbourhood by bike or on foot helps them to:

- connect to their environments
- develop a concern for the environment
- have a clear 'sense of place' and know their neighbourhood
- have a better understanding of 'time' and how long it takes to travel
- be more physically active
- connect to and aspire to have a healthy, active lifestyle
- be less stressed
- make better and deeper friendships
- concentrate better in lessons.

Playing outdoors in nearby spaces, preferably green spaces with plenty of play 'affordances', helps children to:

- connect to their environments
- have concern for the environment
- be more physically active
- be less stressed and have better mental health
- learn how to cope with 'boredom'
- understand deferred gratification
- learn to focus their attention
- make better and deeper friendships
- handle conflict
- observe, interact with and understand their own and other's cultures
- learn from and with peers – skills essential to navigating childhood
- interact with others equally (away from adult 'power') and learn to treat their peers as equals
- have a clear 'sense of place'
- develop skills around teamwork, leadership, collaboration and group dynamics
- develop self-confidence, grit and resilience
- be creative and adaptable
- be more self-reliant
- develop curiosity and initiative
- sustain and develop their creativity
- develop communication skills
- build problem-solving and critical thinking skills
- be more socially and culturally aware.

Good quality outdoor play environments at school also help children to:

- feel more respected and trusted at school
- build friendships – including mixed ages, between boys and girls and with children with different abilities
- behave better during school time (or have their natural behaviour more respected)
- have less accidents during school
- have less bullying and conflict (as less tension over space/resources)
- feel happier – so they come to school more often
- stay healthy (especially if they go outdoors every day)
- pay attention to the elements they choose
- concentrate better in lessons after playtime

Outdoor education, field visits and 'big adventures' may happen less often but also have a positive impact that is harder to summarise but includes:

- developing self-belief
- fostering grit and resilience
- managing stress and problem-solving
- understanding deferred gratification.

5.4 Acknowledgements

This report was written by Outdoor People, for Project Dirt, the Global lead organisation for Outdoor Classroom Day, to be used by Nature Play and their partners who lead Outdoor Classroom Day in Australia.

We are grateful for the advice of friends, colleagues and partners, in particular the Australian Outdoor Classroom Day team both in Nature Play, Unilever's Omo team and The Bravery. We are particularly grateful to Ed Baines and Helen MacIntyre, of the UCL Institute of Education, who gave invaluable advice on data analysis. We also want to thank the readers of various iterations, and Claire Colvine, Tom Sheppard, Nick Gardner and Katherine Healy who reviewed the report.

The Omo/Dirt is Good team in Australia largely funded the report, with support from Unilever's Dirt is Good Global team. They helped fund this as part of their support for Outdoor Classroom Day in Australia and worldwide, as part of their Dirt is Good movement. The views expressed in this report do not necessarily reflect that of the funders.

5.5 Authors

Cath Prisk is an independent advocate for children's time outdoors. She researches, writes, campaigns and advises around the topics of childhood in general; children at school; and play and outdoors in particular. She holds a BA from the School of Oriental and African Studies, London University, a PGCE (Primary) from Northern College, Aberdeen and an MA in Research Methods from Leeds University. She was previously Director of Play England and a teacher and now runs her own social enterprise, Outdoor People, to increase awareness of the importance of time outdoors for children and families. She is currently Global Campaign Director of the Outdoor Classroom Day campaign, led by Project Dirt and funded by Dirt is Good, Unilever. Dr Harry Cusworth PhD and Tom Sheppard, both part of Outdoor People, have assisted in researching and writing this document.

5.6 Outdoor Classroom Day Australia led by Nature Play Australia

Nature Play Australia enriches kids' lives through free play outdoors, for the sake of their health, happiness, and positive development.

The world of childhood is changing fast. Modern kids spend less time playing outside than any other generation in history. And they are suffering from a parallel growth in mental health disorders, chronic disease, and an increasing disconnection from the natural world.

It does not have to be this way.

Nature Play Australia is made up of four independent Nature Play organisations in the states of Western Australia, Queensland, South Australia and a Nature Play program of the Australian Capital Territory Government in Canberra. It is founded on the shared understanding that unstructured play outdoors (nature play) is fundamental to a full and healthy childhood.

We believe childhood should be a time of movement, discovery, creativity and wonder; and we are dedicated to helping families balance the sedentary and entertainment-focused nature of modern life with unstructured play outdoors for the benefit of children's health and happiness.

Nature Play Australia is committed to working in partnerships to help bring about positive change for children. This is why we are so excited to be joining forces with Project Dirt and Omo, as well as with partner NGOs in the states and territories where Nature Play organisations have not yet been established, to make Outdoor Classroom Day truly Australian, and help every child get outdoors to learn and play every day, at school and beyond.

Find out more about Outdoor Classroom Day in Australia, download resources, check out the inspirational stories from other schools and sign up over at: <https://outdoorclassroomday.com.au/>

Get involved in Outdoor Classroom Day Australia!

Outdoor Classroom Day is a global campaign to celebrate and inspire learning and play outside the classroom, led in Australia by Nature Play and supported by Omo as part of the global campaign led by Project Dirt and supported by Unilever's Dirt is Good brands.

On the day schools across the world take at least one class outdoors, teaching essential skills and raising awareness of the importance of play. We hope this will inspire schools everywhere to make outdoor learning and play a part of their school every day! With everyone's support, we can make sure children everywhere enjoy their childhood and have the foundations they need for the life they want to live. Play for today, prepared for tomorrow!

Find out how you can get involved and access all the resources at: www.outdoorclassroomday.com.au

Do be aware you get involved at your own risk! Be prepared to be amazed...

