



# New approaches to persistent problems in Australia's schools

Forum report

Forum report No. 01/2014

April 2014

Sara Glover, Bronwyn Hinz and Mailie Ross



## Acknowledgements

The authors sincerely thank panel members and all those who attended the Mitchell Institute policy forum, *New approaches to persistent problems*, held in Melbourne in November 2013. They also extend their gratitude to the many colleagues and peers who contributed their ideas and feedback through policy workshops and during the drafting of this document.

## About the authors

**Dr Sara Glover** is the Director of Education Policy at the Mitchell Institute. She has held senior leadership roles at the Victorian Department of Education and Early Childhood Development and was Director of Education and Training and a Principal Researcher at the Centre for Adolescent Health at the Royal Children's Hospital/University of Melbourne.

**Bronwyn Hinz** is a Mitchell Institute Policy Fellow and a researcher, writer and policy consultant based at the University of Melbourne where she is completing her PhD on federalism and education policy reform. Her innovative research has won multiple awards and earned her a Visiting Scholar position at Columbia University's Teachers College in New York City.

**Mailie Ross** is an education policy analyst at the Mitchell Institute. She has worked as a secondary school teacher through the Teach for Australia program and was a Senior Associate at The Boston Consulting Group. Mailie was recently awarded a Frank Knox Memorial Fellowship to study at the Harvard Graduate School of Education.

## About the Mitchell Institute

The Mitchell Institute for Health and Education Policy is an independent research and policy institute that works to improve the connection between evidence-based social research and public policy reform. The Institute was founded on the principle that health and education are critical components in the development and progress of an economically and socially prosperous society. This is reflected in its focus on disadvantaged communities and the transformational change effective education and good health can deliver. The Institute's policy and research program aims for big systemic change and is underpinned by a collaborative model which uses policy and research networks to build a solid evidence base and achieve large scale policy impact. The Institute was established in 2013 through the generous financial support of the Harold Mitchell Foundation and Victoria University, Melbourne.

## The panel

In November 2013, the Mitchell Institute hosted a policy forum titled *New approaches to persistent problems* attended by approximately 100 of Australia's leading education, government and policy leaders, researchers, and practitioners. The discussion was chaired by Mark Burford, Executive Director of the Mitchell Institute and led by an expert panel comprising:

**Kathryn Greiner:** Kathryn was a member of the Commonwealth Government's Schools Funding Review Panel, led by David Gonski. The panel's ground-breaking report initiated reforms to school funding that place students at the centre and put education resources where they are needed most.

**Professor John Hattie:** John is Director of the Melbourne Education Research Institute at the University of Melbourne. He has deep insight into what successful schools do to enable young people to learn and has put the quality of teachers and teaching at the forefront of public debate. His influential book, *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*, is believed to be the world's largest evidence-based study into the factors which improve student learning.

**Dr Lisa O'Brien:** Lisa is CEO of The Smith Family which is leading Australia's boldest NGO-led education initiative to provide learning opportunities for young people who too often miss out. The Smith Family supports over 34,000 disadvantaged students in 96 communities across Australia through its *Learning for Life* scholarships

**Dr Yong Zhao:** Zhao is a Professor in the College of Education at the University of Oregon. He is an internationally recognised scholar known for his provocative thinking. An expert on the world's leading schooling systems, he sets out a challenge to Australia, cautioning us against the last wave of test-focused reform and pointing us to what he sees as the new wave of education reform focused on innovation.

## Additional quotes provided by:

**Rod Glover**  
Hands on Learning Australia

**Associate Professor Sharon Goldfeld**  
Murdoch Children's Research Institute

**Anthony Mackay**  
Centre for Strategic Education

**Professor Geoff Masters**  
Australian Council for Educational Research

# Foreword

At the Mitchell Institute for Health and Education Policy, we are excited to stand alongside others in Australia’s growing “think tank” and policy culture. Our founding partners, the Harold Mitchell Foundation and Victoria University, have a big vision for the Institute: to transform health and education outcomes in Australia by improving public policy.

We have been set an exciting and challenging task. Our work is based on a belief that all Australians should have access to the opportunities that education and good health provide, and that by providing these opportunities we create social and economic prosperity. The Mitchell Institute is a policy organisation – a think tank aiming to have policy impact. We are also a research organisation seeking to bring evidence and new ideas to bear through the best research. Networks are critical to our work – we respect, work with, and want to build on the work of many others in the research and policy world.

In that spirit, in November 2013, we hosted a discussion with a panel and audience of people who have made a significant contribution to education reforms over previous decades and are continuing to make a difference to education. We asked them to examine the tough and persistent problem of young people falling behind and being failed by our schooling system. The event aimed to advance the debate with evidence and ideas, and to bring together a network of thinkers and reformers. This paper outlines the issues, discussion and next steps that came out of the Mitchell Institute policy forum: New approaches for persistent problems.

**Mark Burford**  
Executive Director  
Mitchell Institute

# New approaches to persistent problems

There are some real success stories and world class practices in schools and communities around Australia. But there are still too many children who start behind and stay behind, and too many young people are disengaging from school. By year 9, one in four students cannot read well enough to equip them for further education, training or work.<sup>1</sup> By year 10, half of Australia's students miss more than a day of school each fortnight.<sup>2</sup> Twenty per cent of students do not make it to year 12, and a quarter of 17-24 year old school leavers are not fully engaged in education, training or work, a figure that increases to 42 per cent for people from low socioeconomic status (SES) backgrounds and 60 per cent for Indigenous young people.<sup>3,4</sup> Recent ABS data shows that youth unemployment has reached as high as 21 per cent in some areas of Australia<sup>5</sup> and, as we know, this carries serious social, health and economic consequences for these individuals and for the nation. Higher levels of education are correlated with higher earnings and better health, and many economists predict that increasing educational achievement and attainment will result in GDP growth.<sup>6-8</sup>

Australia has made a lot of ground in education policy in recent years and the current school funding reforms may be an important step in delivering higher quality and greater equity. It's encouraging to see there is significant agreement across sectors and political lines: there is agreement that funding matters, as does engagement with families, teaching quality, school leadership, performance management, classroom practice and curriculum. There is also agreement that school autonomy can spur positive change, although we don't always agree on what autonomy means or how to implement it.

There is a wealth of Australian and global research on what works to improve learning, engagement and equity. But, despite decades of state/territory and Commonwealth initiatives and funding increases, there is limited evidence of system-wide progress on student learning and engagement. Institutional inertia, service fragmentation, poorly targeted resources and distracting or conflicting policy priorities have been significant barriers to progress.

## Four propositions to accelerate transformation

The Mitchell Institute proposes a recalibration of the school reform agenda to build on the progress already made and advance the important policy discussions currently underway. We have identified four propositions necessary to complement and underpin existing areas of policy focus, including school autonomy, leadership, teaching practice, curriculum, parent engagement and needs-based funding. We strongly believe these propositions will enable rapid, locally-led improvements to student learning and development, and generate real and sustained progress in educational outcomes.

## The four propositions are:

1. Set ambitious and clear goals for schooling and measure what matters
2. Invest more in the early years of schooling and support schools to allocate resources where they are most effective
3. Create new models of schooling that engage, challenge and support students to develop diverse talents and capabilities
4. Get real-time relevant data and evidence into local communities to mobilise and inform action

We offered these propositions, along with a background paper, for discussion in November 2013 at the Mitchell Institute policy forum: *New approaches for persistent problems*. This paper presents the discussion highlights and opportunities for further work.

# 1. Set ambitious and clear goals for schooling and measure what matters

## It's important that schooling has clear and ambitious goals

We cannot talk meaningfully about what type of teaching and learning we need unless we are clear about what we are trying to achieve in education. The 2008 *Melbourne Declaration of Educational Goals for Young People* commits the Commonwealth and state/territory governments, and non-government school authorities, to a school system in which all young Australians become “successful learners, confident and creative individuals, and active and informed citizens”.<sup>9</sup> However worthy, these goals are difficult to quantify and have limited traction at the school, classroom or individual level. Consequently, schools are being judged on proxy measures such as NAPLAN, PISA performance and ATAR scores.\*

Literacy and numeracy provide essential foundations for further learning and the goals we set in education should build on them. Students who do not develop robust literacy and numeracy in primary school find themselves stranded in secondary school without the skills to understand the subject-focussed content of classes, or to participate to their full capacity as engaged citizens and workers in the future. Many forum participants agreed that the goals of schooling need to emphasise literacy and numeracy. They also agreed that we should expand upon these critical foundations to develop other important skills and traits that students need for success in and beyond school, such as creativity, motivation, communication skills and persistence. The public debate is often unhelpfully framed as an either/or dichotomy between literacy and numeracy and these broader “non-cognitive” skills. Yet, there is compelling evidence that these differing skill sets reinforce each other and that both sets are critical.<sup>10</sup>

“We cannot benchmark the best of the past to create a system that will be the best in the future.”

**Dr Yong Zhao**

\* NAPLAN (the National Assessment Program – Literacy and Numeracy) is an annual standardised test of all year 3, 5, 7 and 9 students in reading, writing, language conventions and numeracy.

PISA (the Program for International Student Assessment) is a triennial standardised test of a sample of 15 year olds in more than 70 economies worldwide. PISA focuses on reading, maths and science.

ATAR (the Australian Tertiary Admission Rank) is a rank, scored between 0 and 99.95, used to gain admission into university. It is calculated based on scaled academic achievement in year 12 (and sometimes year 11) assessment.

## Standards are a useful but limited tool for measuring educational success

We measure students against standards: levels that define by age, the skills and knowledge that students should have. Standards are useful as a benchmark, and the tests (such as NAPLAN) that schools use to determine whether students have achieved particular standards are an important “point in time” diagnostic. Teachers and students can use them to assess individual progress, and governments can use them to identify schools or regions where reform initiatives are successful or are failing. But standards and associated tests have limitations, particularly if there is a disproportionate focus on them. Forum participant Geoff Masters cautioned that standards can set students up to fail if they start behind, and to coast if they start ahead. For example, a student who starts three years behind can make impressive progress, but still be failing based on the standard for his or her age. Panellist Yong Zhao challenged us to consider how an over-reliance on test results may provoke perverse behaviours in schools. For example, we may exclude students who are likely to get poor results or limit the curriculum to subject areas that are tested at the cost of other, enriching activities such as music and sport.

“We act as if we can come up with single measures that are meaningful. In the real world, advanced economies grow as they develop deeper and more diverse capabilities.”

**Rod Glover**

## The indicators we use in education should reflect what we want education to achieve

If teachers, schools and systems are to embrace a broader, more ambitious set of goals for education, it's important that these goals are measured. Yong Zhao emphasised that our measures of learning should support rather than stifle diversity, and fellow panellist John Hattie urged for measures based on student progress, rather than the level a student is at. He cautioned against the complacency that can result from setting only minimum standards for literacy and numeracy, since they do not provide a goal for the majority of students who are already above the minimum. Schools, communities, students and parents also need to have a voice in developing measures of success, and appropriate assessment practices are needed to support those measures.

“We need to be able to measure a much wider set of outcomes across the entire system. How else can we drive a transformed learning system?”

**Anthony Mackay**

## 2. Invest more in the early years of schooling and support schools to allocate resources where they are most effective

### Students who start behind tend to stay behind

Too many children start school ill-equipped to benefit from the learning opportunities schools offer. Twenty-two per cent of Australian children are vulnerable on one or more developmental domains when they start school, which increases by approximately eight percentage points for the most socioeconomically disadvantaged communities.<sup>11,12</sup> Developmental concerns that present at school entry tend to be exacerbated over the early primary school years<sup>13</sup> and, as John Hattie reminded us, if a child does not learn to read by age eight, it's very difficult for them to catch up.

“If you don't get the building blocks right early for children, you might as well throw away the money you are investing in schools.”

**Kathryn Greiner**

### Evidence suggests that frontloading investment in the early years will yield greater returns than investing in later years of schooling

Australian secondary students are funded more than primary school students. Essentially, this subsidises smaller classes in years 11 and 12. This disproportionate investment is reflected in Enterprise Bargaining Agreements<sup>†</sup> that expect primary school teachers to work with bigger classes over longer face-to-face hours than secondary teachers. The trend is also evident in early childhood education, which receives less funding per child than schools.<sup>14</sup> This disparate level of investment appears to disregard the compelling evidence that frontloading investment in the early years of schooling yields far greater returns in the later years.<sup>15</sup>

Australian research also indicates significant increases in language and cognitive skills amongst children who attended preschool programs with a qualified teacher<sup>16,17</sup> and that targeted, intense early-intervention programs that are tailored to children's individual needs can establish fundamental building blocks for learning.<sup>18</sup> This principle can also be applied to later schooling; for example, focussing resources on the transition into high school can ensure students engage early and successfully with formal secondary level learning.

“Many students continue through school without the foundations for successful learning, and the transition from primary to secondary exacerbates that problem.”

**Dr Sara Glover**

### Schools need the flexibility to use resources, including financial and in-kind, more effectively

Some schools are achieving outstanding progress in literacy, numeracy, student engagement, and other domains that we measure.<sup>19</sup> Despite this, there is still significant variation in performance within and between schools.<sup>20</sup> Barriers remain for schools wishing to learn from and implement highly effective practices from elsewhere. Many school leaders say they can't find the time to research effective models and some lack the necessary support or flexibility to invest resources where they can have the most impact. With school autonomy high on state/territory and Commonwealth political agendas, many agree it's critical to ensure that schools have the flexibility, support and resources they need to extract lessons from available evidence.

<sup>†</sup> Enterprise Bargaining Agreements (EBAs) are the industrial agreements negotiated between teachers and their employers (e.g. education departments). EBAs are different in each state and territory in Australia, and are different in government, Catholic and independent schools.

### 3. Create new models of schooling that engage, challenge and support students to develop diverse talents and capabilities

#### **Schools cannot overcome the serious challenges facing many students using current classroom structures, or on their own**

Despite pockets of excellence, current models of schooling struggle to engage a large proportion of students or equip them with the skills they need to succeed in future education and employment. The challenge is twofold. First, schools are increasingly expected to address the complex needs of many students who may be facing poverty, mental health problems, family violence, homelessness and other challenging circumstances. Second, the way classes are organised can be an obstacle to meeting students at their point of need. Geoff Masters emphasised, for example, that in any year level, the most advanced ten per cent of students are five to six years ahead of the least advanced ten per cent. Nevertheless, in most schools, students are divided into year levels and are taught a common curriculum. This structure is reinforced in the way teachers and other workers are organised within schools.

“We perpetuate this siloed mythology that education is somehow responsible for all outcomes for children, I think that sets education up to fail.”

**Associate Professor Sharon Goldfeld**

#### **Schools need to be supported to better engage with parents, communities, health providers, business and support services**

Students, families, and communities, including employers and health professionals, are critical partners for schools. Examples of school and community collaborations can be found across Australia, such as The Smith Family School Community Hubs, where there is a systematic network of schools, families, community agencies, business and others who work together to cater for the diverse needs and aspirations of young people. Collaborations such as these provide a promising approach to developing students’ talents and capabilities in a range of settings both inside and outside classrooms. However, school and community leaders state that current policy settings, including regulation, funding and reporting, make it difficult to initiate and sustain these different kinds of models.

“New models for schooling must treat schools as part of a broader community. They demand both new governance and more flexible cross-sectoral funding arrangements.”

**Dr Lisa O’Brien**

#### **Traditional models of educational delivery need to change to improve outcomes**

The classroom structure within most schools can be unduly restrictive. We are all familiar with classes of a maximum number of students, grouped by age and instructed by a single teacher. These structures can unnecessarily limit the reach of the most effective teachers and fail to optimise the learning of individual students. Varying classroom and teaching models could enhance student learning. For example, highly effective teachers may lead a group of teachers in instructing large numbers of children using shared lesson materials, giving the best teachers the greatest reach.<sup>21</sup> Judicious use of technology, tailored to individual learning needs, can reinforce and extend students’ learning while freeing up teachers for more complex tasks.

“I think one of the real challenges we face is thinking about whether the structure of schools is part of the reason we’re not meeting the needs of individuals.”

**Professor Geoff Masters**

#### **Policy should foster effective local community solutions rather than just “scaling up” success**

With the right support, schools and communities are best placed to use the available evidence to respond to the needs of children and young people in the community. Rather than “scaling up” success from elsewhere or imposing changes from above, we want to better understand how policy settings can create opportunities for community-led solutions to flourish. One-size-fits-all solutions are not going to address the complex and unique challenges faced by different communities, nor are successions of pilot programs. Schools and communities need flexibility and support to initiate, refine and extend local solutions, or to adapt models from elsewhere to better suit their particular circumstances.

## 4. Get real-time relevant data and evidence into local communities to mobilise and inform action

### **Educators and communities need timely, meaningful data to tailor responses and understand their progress**

Opening up access to data can help communities achieve improvement; it can also prompt new analyses and insights that are missed when data is restricted to a select few. Effective analysis of meaningful data helps to prevent the continued “reinvention of the wheel”, which wastes school time and resources on ineffective strategies that have already been tried. Forum participant Rod Glover suggested that real benefits for schools will come if we improve data usability, share evidence effectively, and identify insights into what really works.

State/territory and Commonwealth governments regularly collect administrative, survey and assessment data that provide information about education, health, housing and employment. They hold a wealth of information about individuals, schools and regions. These data are generally accessible to the public in highly aggregated form, masking both the successes and failures of local programs or pilot reforms. Even data relating to specific schools are often not made available to those schools in a timely way. This reduces the usefulness of data as an improvement tool for schools, communities and others.<sup>22</sup>

Schools and communities need relevant, real-time data on outcomes to consistently track progress, evaluate programs, and inform improvement strategies.<sup>23</sup> A growing number of communities are using data to propel powerful change.<sup>24</sup> However, this is frequently labour intensive and requires high skill levels, as well as considerable investment, to access, re-format and translate the data. The potential for under-resourced schools to use relevant data for meaningful analysis is exciting and potentially game-changing. At a system level, surely governments could play a bigger role in expanding data access and facilitating training and data capability building in schools.

“What I would spend any extra money on is giving teachers and school leaders access to the right data so they can understand their impact on a day-to-day basis.”

**Professor John Hattie**

### **A final note**

Sitting across all of these propositions is the issue of federalism and intergovernmental relations. At the moment, there is overlap between Commonwealth and state/territory roles in funding and regulation, and sectoral interests are sometimes guarded at the expense of genuine equity. Many of our forum participants cited the current government arrangements as a significant barrier to system reform, stating that if we are going to stimulate system change in education, the broader issues relating to Australia's federal system of government are fundamental to our work.

Federalism creates a “natural laboratory” for education policy, where states and territories can learn from each other's success. There is a role for the Commonwealth Government in buttressing promising state/territory reforms. But some argue that Commonwealth-state/territory responsibilities in the schooling portfolio need to be more clearly delineated. This is necessary to ensure that funding and accountability arrangements do not obstruct flexibility and innovation at the state/territory, system authority or school level, or impose unnecessary or onerous reporting requirements that divert attention and resources from focussing on what matters in improving student learning and development.

# Directions for the Mitchell Institute

## Sara Glover Mitchell Institute Director, Education Policy

The Mitchell Institute forum, *New approaches to persistent problems*, represented an important step for us in refining our thinking, informing the directions for the Institute's education program, and focusing our efforts on the education challenges that persist in Australia and are resistant to change.

Among the many experienced and respected colleagues who attended the forum, one common and important message was patently clear: there is an imbalance in educational outcomes in Australia and if centralised reform is to work, it must create an environment whereby change is allowed to be locally led and sustained – by principals and teachers, schools and communities, students and parents. This powerful insight underpins the four propositions outlined in this paper and directly informs the Mitchell Institute's policy and research agenda for 2014.

Together with our research partners, we will first undertake research that increases our understanding of high impact learning systems and how they improve learning for children and young people both within and beyond the boundaries of school. By working closely with schools and communities, we will identify the most important features and capabilities that systematically improve learning opportunities and achievement. We will learn how locally-led decision-making and collaboration can work to transform the lives of young people. A particular focus of this work will be how system-wide policy can enable these local collaborations to develop and thrive.

This work will inform the development of new education indicators to better measure what really matters in preparing students and young people for a successful adult life. This will involve a more creative use of existing data sources and the design of new measures that will provide a sophisticated picture of educational and wellbeing outcomes. Crucially, these measures will be designed using evidence as well as practice, so the indicators genuinely reflect what matters and provide useful signposts for schools and communities to mobilise and inform action.

Alongside this program stream, we will seek to understand the macro settings by examining where the best systems in the world are heading, and investigate what changes educational leaders in those countries are pursuing over the coming decade. We will compare how different education systems prepare young people for life beyond school, and look at how students achieve positive transitions to further learning, work and adult life. We will seek to gain insight into the relationship between academic performance, student attitudes and aspirations, and work, community participation, and overall wellbeing.

The emphasis of our work will initially be on schooling, but the interconnectedness of schooling with early childhood and tertiary education means there is an imperative to understand how these sectors influence one another. We have already commenced work on how the tertiary sector could be reconceptualised to build the diversity of skills Australia needs. We are currently exploring the system shifts that are required in early childhood development with partners in social enterprise and government. Other opportunities to work with government, researchers and other not-for-profits are continuing to develop around Australia and globally.

Our program is an exciting one and there is much to be done. We have been energised by the many thoughtful discussions we've had with a broad range of people. Within our policy and research networks, we have a wealth of experience and collective wisdom, and we believe it is through our joint effort that we are most likely to bring about the fundamental changes we are all seeking.

We look forward to the work ahead and to the many collaborations through which we will achieve improvements in equity and quality in Australian schooling.

**Dr Sara Glover**  
Director, Education Policy  
Mitchell Institute

## References

- 1 This is based on the proportion of students at or below the National Minimum Standard on NAPLAN. The Australian Curriculum, Assessment and Reporting Authority states that students who are below the National Minimum Standard are at risk of being unable to progress satisfactorily at school without targeted intervention, and that students who are performing at the National Minimum Standard may also require additional assistance to enable them to achieve their potential.  
  
Australian Curriculum Assessment and Reporting Authority (2013) "NAPLAN Results." [online] Available from: <http://www.nap.edu.au/results-and-reports/naplan-results/results.html> (Accessed 5 November 2013)
- 2 Hancock, KJ, Shepherd, CCJ, Lawrence, D and Zubrick, SR (2013) Student Attendance and Educational Outcomes: Every day counts, Canberra, Telethon Institute for Child Health Research for the Department of Education, Employment and Workplace Relations.
- 3 Australian Bureau of Statistics (2013) Schools Australia, Catalogue No. 4221.0. [online] Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4221.0>
- 4 Council of Australian Governments (COAG) Reform Council (2013) Education in Australia 2012: Five years of performance, Sydney, COAG.
- 5 Australian Bureau of Statistics (2014) Labour Force, Australia, Detailed - Electronic Delivery, Feb 2014, Catalogue No. 6291.0.55.001, [online] Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6291.0.55.001>
- 6 Hanushek, E and Woessmann, L (2010) The high cost of low educational performance: The long-run economic impact of improving PISA outcomes, Paris, OECD Publishing.
- 7 Nous Group (2011) Schooling challenges and opportunities: A report for the review of funding for schooling panel, Nous Group, National Institute of Labour Studies and Melbourne Graduate School of Education.
- 8 Access Economics (2005) The economic benefit of increased participation in education and training, Dusseldorp Skills Forum and Business Council of Australia.
- 9 Ministerial Council on Education Employment Training and Youth Affairs (2008) Melbourne Declaration on Educational Goals for Young Australians, Melbourne, Ministerial Council on Education Employment Training and Youth Affairs.
- 10 Levin, HM (2012) "More than just test scores." *Prospects*, 42(3), pp. 269–284.
- 11 Office of Early Childhood Education and Child Care (2012) Australian Early Development Index 2012: Summary Report, Canberra, Department of Education, Employment and Workplace Relations.
- 12 Centre for Community Child Health and Telethon Institute for Child Health Research (2011) A Snapshot of Early Childhood Development in Australia: AEDI National Report 2009, Canberra, The Royal Children's Hospital.
- 13 Goldfeld, S, O'Connor, M, Quach, J, Tarasuik, J and Howell-Meurs, S (2013) Academic Trajectories of Children with Special Health Care Needs in Australia, Murdoch Children's Research Institute, Royal Children's Hospital, The University of Melbourne.
- 14 Organisation for Economic Cooperation and Development (2013) Education at a Glance 2013, Paris, OECD Publishing.
- 15 Heckman, JJ (2008) The Case for Investing in Disadvantaged Young Children, Washington, First Focus.
- 16 Thomson, S, Hillman, K, Wernert, N, Schmid, M, et al. (2011) Highlights from TIMSS & PIRLS 2011 from Australia's perspective, Melbourne, Australian Council for Educational Research.
- 17 Warren, D and Haiksen-DeNew, JP (2013) Early Bird Catches the Worm: The Causal Impact of Pre-school Participation and Teacher Qualifications on Year 3 NAPLAN Cognitive Tests, Melbourne Institute of Applied Economic and Social Research.
- 18 Moore, T and McDonald, M (2013) Acting Early, Changing Lives: How prevention and early action saves money and improves wellbeing, Melbourne, Centre for Community Child Health at The Murdoch Childrens Research Institute, Royal Children's Hospital for The Benevolent Society.
- 19 Jensen, B and Sonnemann, J (2014) Turning around schools: it can be done, Melbourne, Grattan Institute.
- 20 Thomson, S, De Bortoli, L and Buckley, S (2012) PISA 2012: How Australia measures up, Melbourne, Australian Council for Educational Research.
- 21 Public Impact (2013) "Opportunity Culture." [online] Available from: <http://opportunityculture.org/> (Accessed 2 December 2013)
- 22 Graham, K and O'Neil, D (2013) "Collective Impact - The Devil is in the Data." *Collective Impact Australia*. [online] Available from: <http://collectiveimpactaustralia.com/2013/08/30/collective-impact-the-devil-is-in-the-data/> (Accessed 30 September 2013)
- 23 Zbar, V, Kimber, R and Marshall, G (2008) How our best performing schools come out on top: An examination of eight high performing schools, Melbourne, Department of Education and Early Childhood Development.
- 24 Pope, J and Nolan, E (2011) The State of Bendigo's Children report, Bendigo Child Friendly City Leadership Group.



Mitchell Institute for Health and Education Policy

300 Queen Street, Melbourne, Victoria

t. +61 3 9919 1820

e. [info@mitchellinstitute.org.au](mailto:info@mitchellinstitute.org.au)

w. [mitchellinstitute.org.au](http://mitchellinstitute.org.au)