



GONSKI 2.0

MAKING AUSTRALIA THE WORLD LEADER IN EDUCATION INNOVATION POSITION PAPER

Over the past 40 years, a new “knowledge economy,”¹ characterised by a “greater dependence on knowledge, information and high skill levels” (p. 28),² has arisen. However, as the Gonski 2.0 Report rightfully points out, Australia is still using an education model designed for the industrial age—an efficiency-based model that fails to differentiate learning and provide students with the “problem-solving, interactive and social skills, and critical and creative thinking” capabilities necessary to succeed in this economy (p. ix).³

To remedy this and improve Australia’s PISA test scores and schools’ NAPLAN scores, Gonski 2.0 recommends that school systems and schools place the “learning growth of each student at the centre of their education model” (p. 5). The assumption is that a shift from specified learning outcomes based on age and grade to a focus on each student’s learning growth will transform the current education model to one that differentiates learning for each student, ensuring “all Australian students reach their full learning potential in each year of schooling” (p. 5).

We view transformation of the current education model as an urgent discussion to be had globally. Given the accelerating rate of change due to the proliferation of digital technologies and the creative destruction⁴ of not only jobs but industries, teachers can no longer be constrained by a model designed for a past economy where change occurred more incrementally.⁵ Gonski’s initiation of this discussion places Australia as a potential leader in what will inevitably be a worldwide education paradigm shift—a true innovation in education. Thus, Montessori Australia fully supports Gonski’s recommendation to prioritise learning growth rather than specified learning outcomes based on age and grade. We also support partnering with students in their learning, so they feel more ownership of it, as this fosters their lifelong love of learning.⁶

QUESTIONS AND COMMENTS FUNDAMENTAL TO INNOVATING EDUCATION

While we support the shift to learning growth, we also question whether this shift is significant enough to transform—truly innovate—Australia’s education model such that it provides students with the capabilities that the knowledge economy requires. We offer questions and comments we perceive as fundamental to the discussion of education innovation.

Do other aspects of the industrial model need to be changed?

If schools continue to be required to segregate students by grade, teach subjects in isolation, and emphasise teacher- rather than student-directed learning, then we will not “look back in a decade to a transformed education system” (p. 5), as key aspects of the model will have remained the same. In fact, it is unclear how teachers can truly differentiate learning while these key aspects are still in place.

Any education model drives the behaviour of all the people within it: school leaders, teachers, and students. Segregating children by grades and dividing each day into subject blocks requires each classroom to be teacher-directed. But how do teacher-directed classrooms organically provide students with opportunities to practice “problem-solving, interactive and social skills, and critical and creative thinking”? Subject blocks are short. And because teachers will need to ensure that each student gains “at least one year’s growth in learning [...] every year” (p. xii), teachers will ultimately have to determine each student’s learning pace, which may adversely impact students’ sense of educational ownership and, hence, their lifelong love of learning.

To better support teachers’ ability to differentiate learning and partner with students, other aspects of the current efficiency-based model must also be reconsidered.

Will students develop self-regulated learning skills?

Self-regulated learning is a key capacity for success in a knowledge economy that requires constant learning to innovate. Self-regulated learners are “masters of their own learning process” who are able to “transform their mental abilities into task-related skills in diverse areas of functioning, such as academia, sport, music, and health” (p. 13855).⁷ Thus, self-regulated learners can effectively learn within any domain. If the education model, however, still requires teachers to give lessons to the entire class while simultaneously determining each student’s learning pace within each short subject block, when do students have the time to practice regulating their own learning during the school day? Does a school day divided into relatively short subject blocks provide this time? Or will students ultimately be directed as to what to do and when to do it? We assert that practicing self-regulated learning skills requires more time and autonomy than the current model allows.

Will students gain a systems worldview?

Continuing to teach subjects in isolation is based on a Newtonian, mechanistic worldview that systems biologists⁸ have shown and physicists⁹ are now arguing is insufficient to understanding complex structures. As sociologist John Urry notes, we are in the midst of the “complexity turn,” which “investigates emergent, dynamic and self-organising systems that interact in ways that heavily influence the probabilities of later events” (p. 3).¹⁰ Complexity is increasingly more prevalent “within many social and intellectual discourses and practices besides ‘science’”, including economics, management, defence studies, architecture, etc. (p. 2). But teaching subjects in siloed isolation fails to reveal their interrelatedness—their overall complexity—leading students to view problems of economy, society, and environment as discrete and solvable through reductionistic methods. In reality, however, such problems “are not,” as systems researcher, John Sterman states, “separate domains to be traded off against one another” (p. 26).¹¹ Thus, a systems worldview is essential to creative and critical thinking, which is why education researchers are proposing new educational paradigms that foster this view. Maria Hofman nicely summarises one paradigm proposed by sustainability researcher Stephen Sterling:

A policy change should develop education from being seen as a product to being described as an ongoing developmental process that develops potential and capacity throughout life at both the individual level and societal level through lifelong learning. Such learning requires a change in the methodology and practice within education. Instead of education limited to instruction and knowledge transfer, the change should result in education being developed into a dynamic, activity-based and participatory training based on generating knowledge and meaning in relation to the circumstances in local society and the world. Problem solution in such education is thus based on real events (p. 224).¹²

We wholeheartedly agree with this proposed shift, and we offer our own Montessori model as an example of one (see our Montessori Fact Sheet for more information). We also acknowledge and support those Australian schools and teachers who are working on other models that also exemplify this paradigm shift.

How do we bridge early childhood education with primary and secondary education?

Gonski 2.0 rightfully points out the importance of the early years on school readiness and later learning. However, in the current model, early childhood is disconnected from primary and secondary education. We assert that any true innovation in education requires a model based on human development rather than efficiency. Such a model can provide a continuous flow throughout students' schooling—from birth through adolescence—bridging the early childhood years to the later years. It also has the potential to alleviate “disparities in school readiness,” allowing even “developmentally vulnerable children” (p. 17)³ to more easily settle into school and achieve, and to help equalise later academic outcomes.¹³

However, we are not suggesting that infants be taught academic subjects. Academics is only one part of a student's learning, and focusing on thinking ignores how humans are fundamentally built. Conscious thinking is only one part of a dynamic response system necessary for effective adaptability within any environment (including the knowledge economy). Automatic behaviours are also required. The ability to smoothly switch between these two response systems—conscious intentional thinking and automatic behaviours—is foundational to having good executive functions.^{14,15} Executive functions are “those functions [a person] employs to act independently [in her] own best interest as a whole at any point in time, for the purpose of survival” (p. 506).¹⁵ Having good executive functions is necessary for both school and life success.¹⁶

To build good executive functions, infants need opportunities to move and interact with the environment, which develops their immature motor and sensory systems. Environments rich in purposeful sensorimotor materials essentially train these systems, allowing children to gain a large repertoire of automatic movements foundational to an effective dynamic response system. Research continues to show that children with poor motor skills generally have later problems with working memory and academic learning. And children with learning disabilities tend to have poor motor skills.¹⁷ Thus, movement and cognition are linked.

Additionally, the neural circuits involved in movement regulate thinking and emotions just as they regulate movement,^{14,15} and the brain regions involved in these circuits continue to develop throughout childhood and adolescence.¹⁸ Thus, an education system based on how humans actually develop should include extensive opportunities for students to engage in movement so they can build an increasing repertoire of complex automatic action patterns that not only support better conscious, intentional thinking, but also help to actually build the neural circuits that directly regulate thinking and emotion regulation.

Bridging early childhood with primary and secondary education necessitates a model that understands how the brain develops—not a model based on factory efficiency that constrains students, teachers, and school leaders.

Does a continued focus on testing derail us from true educational innovation?

The Gonski 2.0 Report states that “Australian education has failed a generation of Australian school children by not enabling them to reach their full learning potential” (p. 8). They cite declining OECD PISA and stagnating NAPLAN literacy and numeracy scores as evidence. The concern is that these scores indicate the potential of a future decline in Australia's standard of living as schools will not produce workers with the capabilities necessary for success in the knowledge economy. But is this true?

Gonski's Exhibit 5 (p. 9) shows “a significant achievement gap between Australia and the highest performing country in both reading literacy and mathematics”—Singapore. Yet, as education researcher Yong Zhao notes, Singapore and the other high-ranking Asian countries consistently show a “negative relationship between PISA scores and entrepreneurial capabilities,” which are “directly related to economic prosperity and success” (p. 58).¹⁹

In fact, according to Zhao, China and Singapore “blame their own supposedly excellent education for their inability to produce creative and entrepreneurial talents like Steve Jobs” (p. 58). He points out that “although products worth billions of dollars are made *in* China, they are not made *by* China” (p. 57; emphasis in original). Thus, the assumption that declining PISA scores are indicative of a future decline in Australia’s standard of living due to an inability to produce workers for the knowledge economy is highly questionable.

What is also questionable is whether focusing on test scores—PISA or NAPLAN—actually helps to improve a country’s educational system or whether it derails that process. If test scores are ultimately the target because it is (incorrectly) assumed those scores indicate a country’s future economic success, how do we not fall into the trap of teaching to the test, whatever that test is, while ignoring other important capabilities? Campbell’s Law states:

The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor (p. 366).²⁰

Singapore is not yielding high PISA scores because its school system is focused on teaching “problem-solving, interactive and social skills, and critical and creative thinking.”³ As Singaporean journalist Alexis Ong told Zhao, it is yielding high PISA scores because of “its strictly regimented curriculum and by-rote study techniques that sustain the city’s formal culture” (p. 58).¹⁹ Not only is such an educational system not innovative and fail to produce the capabilities we claim to want to teach, it does not fit with who we are as Australians. We should not become someone other than who we are to achieve success on tests that do not really measure what we think they measure.

Finally, it should be noted that while PISA now claims to measure creativity and problem-solving, Zhao warns:

Remember that whatever these tests are, they are still testing. A test by no means reflects your true creativity—it just measures your capacity to take a creativity test. That actually can become more dangerous and drive governments to do even crazier things.”²¹

Technology innovators recognise the worthlessness of test scores. Google, for instance, conducted their own research and found that “as a criteria for hiring [...] test scores are worthless,” as “they don’t predict anything.”²²

CONCLUSION

We are in the midst of a knowledge economy and the “complexity turn.” Yet our education model in Australia and throughout much of the world is still stuck within an education model designed for a different economy and a different turn—the “Newtonian turn.”²³ Thus, we view Gonski 2.0 as an opportunity for Australia to engage in rich discussion and become the world leader in education innovation. We offer this position paper as a contribution to this vital discussion and welcome the thoughts and questions of others. Our hope is that this conversation leads to more substantive action so Australia does not miss this critical opportunity.

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