Drivers of educational change – a literature review

## Exploring the Case for Change

Although educational change is difficult to initiate, achieve, and sustain, findings across the literature speak to its necessity in an increasingly complex and uncertain world. The NSW Department of Education’s (2018) strategic goals embrace change in the form of ongoing school improvement, in empowering students with the knowledge and skills needed in their future lives, and by establishing resilient and flexible school infrastructure. However, realising this change takes time (Hargreaves et al., 2014) and requires leaders to confront factors they would rather avoid (Fullan et al., 2009). Successful change involves widening leadership density within schools (Bush, 2012), cultivating collective efficacy through continual evaluation of impact (Donohoo, 2017; Hattie, 2015), and innovating through leadership of learning (OECD, 2017).

## The Drivers

This document provides a thematic review of the case for educational change embodied in empirical and applied research, key policy documents, and position papers that have influenced education recent years. Findings encompass global economic, technological, and social drivers as well as evidence from recognised learning environments and high performing educational systems. The collective insights from this body of work illustrate the complexities that underpin the case for change and underscore the actions needed for these changes to be realised.

### Socio-Economic Drivers of Change and Thriving in Uncertainty

Much of the educational change literature cites the impact of the economy, rapid advancements in technology, and changes to the global fabric of society. Some of these changes are longer-term and evolutionary in nature, such as the expansion of scientific knowledge (OECD, 2018) and steady decline of manufacturing culminating in the rise of creative industries (Anderson & Jefferson, 2018). Other changes are seemingly revolutionary, such as the growth of artificial intelligence (Seldon & Abidoye, 2018) and its impact on ethics, human rights, and equity (Southgate et al., 2019). Meanwhile, crises such as COVID-19 have happened unexpectedly with sweeping impact on all areas of society. These crises are prompting a re-thinking of the enabling environment and human capital that support global competitiveness (World Economic Forum, 2020) and of “our relationship to each other, the planet, and universe” (Fullan et al., 2017, p. 4). Technology is now closely intertwined with the economy and an essential part of our lives, representing “…a hyper-connected world with more people and fewer resources…, a workforce that is more mobile and better qualified than ever before, and careers that span multiple jobs, positions, and skillsets” (AITSL, 2012 np.).

The socio-economic drivers that have dominated the global landscape in recent years speak to the difficulties of coming to terms with, and responding to, global change. However, the findings explored here affirm the importance of reskilling and upskilling in emerging skillsets, embracing creativity and innovation, and adapting curricula to reflect the knowledge and skills needed for the future. Although global change can often result in negative responses such as conservative populism and ideology over evidence (Fullan, 2019), education has the potential to empower learners to thrive in times of great uncertainty, and the evidence suggests that learner agency is key. As Richardson and Dixon (2017) argue, “more and more, an education is what we create for ourselves rather than something someone else creates and delivers to us” (p. 3).

### Developing Skills and Capabilities for the Future

At the same time as wide-sweeping global change has become the rule over the exception, an increased focus on shifting employment trends has shaped our evolving understanding about jobs of the future. Evidence suggests employers increasingly seek enterprise skills such as creativity, presentation, and team work and that future jobs will entail significantly more time spent on critical thinking and judgment, science and mathematics skills, and communication and interpersonal skills (Foundation for Young Australians, 2016, 2017). Rapid advancements in technology have resulted in the automation of some jobs previously requiring human skills, prompting further discussion about which jobs are most at risk of automation in the future and the possible impact on society (Herrmann & McFarland, 2019; OECD, 2019). Some analyses point to the combined impact of societal changes such as increased longevity, automation, less predictable career paths, and insecure work (AlphaBeta, 2019), while others stress the difficulties of understanding and measuring skills for an uncertain future (Centre for Education Statistics and Evaluation, 2019; Lamb et al., 2017).

Analysis of the trends that may inform future jobs and employment also highlight the need for skillsets that are resilient and adaptable when responding to change. This includes a broad mix of skills that encompasses both socio-emotional, cognitive, and digital skills (OECD, 2019) as well as skills in specialist areas such as STEM (Office of the Chief Scientist et al., 2016). Research and policy increasingly calls for further attention to how these skills are developed through approaches like apprenticeships in non-traditional areas such as advanced manufacturing, healthcare, and financial services (Herrmann & McFarland, 2019). Beyond formal education, developing these skills requires significantly more continuous, on-the-job professional learning than previously (AlphaBeta, 2019; Foundation for Young Australians, 2017), and many agree that literacy and numeracy are a crucial foundation on which further emerging knowledge and skills are developed over the course of the individual’s life (Centre for Education Statistics and Evaluation, 2019). The changing workforce also presents a number of ethical and legal challenges that relate to increasingly data-driven inferencing and decision-making in many workplaces and suggest that “finding areas where humans can make a unique contribution is thus essential to future employability” (Bennett Moses, 2019, pp. 3–4).

### Learning from successful education systems

Finally, a key component in the case for educational change is learning from high performing jurisdictions around the world and understanding the changes that have underpinned their success. Evidence suggests that systems such as Singapore, Finland, Ontario, and New Zealand are among those that have embraced educational change over the long term and now perform strongly in a range of national and international measures of academic success, learner wellbeing, equity, and future readiness. Findings show that some of the most significant changes in these systems have taken place over several decades, such as the development of Finland’s Peruskoulu — a comprehensive system of high equity and high excellence that began as a post-WWII initiative gradually moving the country “from being a poor, agrarian, and modestly educated nation to a modern, knowledge-based society with a high performing education system and a world-class innovation environment” (Sahlberg, 2014, p. 17). As Hargreaves, Boyle and Harris (2014) assert, meaningful and lasting systemic changes “do not happen overnight with sudden switches in leadership—but only after years of continuous and unrelenting commitment to stronger working relationships and greater success” (p. 14).

Evidence further suggests that positive systemic changes may involve at-times radical change to the curriculum, such as Singapore’s Teach Less, Learn More initiative that substantially reduces curriculum content to enable deeper learning (Toh et al., 2014), or Finland’s recently-revised National Core Curriculum for Basic Education that explicitly makes curriculum integration and multidisciplinary learning modules compulsory in all Finnish schools (Niemelä & Tirri, 2018). These initiatives reflect a process that has been referred to in New Zealand as unbundling and re-bundling, where system leaders “deconstruct established structures and routines and reassemble them in newer smarter ways” (Bolstad et al., 2012, p. 2). In turn, the ability to deconstruct and reconstruct what might elsewhere be viewed as unchangeable or difficult-to-change reflects the system’s capacity to be responsive to all forms of change. Although these findings suggest that systemic change can be instigated through governments and national organisations, powerful changes can be initiated at the local level through partnerships between education leaders and community organisers. Research shows that several major systemic improvements in US jurisdictions such as Chicago have coincided with a dramatic increase in the number of community organising groups prioritising educational change, often leading to higher levels of social trust and civic engagement, improved graduation rates, better academic results, and stronger social cohesion (Shirley, 2009; Welton & Freelon, 2018). In Ontario, major improvements in educational outcomes have likewise correlated with local districts assuming greater autonomy when responding to, and translating, state and national agendas into locally- and community-defined notions of success (Winton & Pollock, 2016).

## Conclusion

By examining socio-economic drivers, skills and knowledge for the future, and high performing systems, this thematic review of recent change literature presents a multifaceted case for educational change in an increasingly complex and uncertain world. Although recent socio-economic and political upheaval only serves to remind us that predicting the future is impossible, relying on inflexible structures, approaches, and mindsets is unlikely to lead to sustained improvement and equally unlikely to prepare learners to thrive in their future lives and work. Current employment trends suggest that future workers will need to demonstrate the same flexibility and adaptability required of educators and schools. Recourse to high performing systems highlights further actions that leaders can take to support changes that are deep and disruptive. Finally, and most importantly, taking a long-term vision of the changes they wish to bring about and in being prepared to unbundle and re-bundle existing structures that do not adequately serve these changes, school communities can be powerful agents of change now and well into the future.

## References

AITSL. (2012). *21st century education*. https://www.aitsl.edu.au/tools-resources/resource/21st-century-education

AlphaBeta. (2019). *Future Skills: To adapt to the future of work, Australians will undertake a third more education and training and change what, when and how we learn*. https://www.alphabeta.com/wp-content/uploads/2019/01/google-skills-report.pdf

Anderson, M., & Jefferson, M. (2018). *Transforming Organizations: Engaging the 4Cs for Powerful Organizational Learning and Change*. Bloomsbury Publishing. https://issuu.com/bloomsburypublishing/docs/transforming\_organizations\_sample\_c

Benade, L. (2019). Flexible Learning Spaces: Inclusive by Design? *New Zealand Journal of Educational Studies*, 1–16.

Bennett Moses, L. (2019). Helping future citizens navigate an automated, datafied world. *UNSW Law Research Paper*, *19–28*.

Bolstad, R., Gilbert, J., McDowall, S., Bull, A., Hipkins, R., & Boyd, S. (2012). *Supporting future-oriented learning and teaching: A New Zealand perspective*.

Bradbeer, C., Mahat, M., Byers, T., & Imms, W. (2019). *A Systematic Review of the Effects of Innovative Learning Environments on Teacher Mind Frames-Technical Report 5*.

Bush, T. (2012). Enhancing Leadership Density through Teamwork. *Educational Management Administration & Leadership*, *40*(6), 649–652. https://doi.org/10.1177/1741143212457553

Byers, T., Mahat, M., Liu, K., Knock, A., & Imms, W. (2018). *A systematic review of the effects of learning envrionments on student learning outcomes.* ILETC.

Centre for Education Statistics and Evaluation. (2019). *General capabilities: A perspective from cognitive science* (p. 10). NSW Department of Education.

Damşa, C., Nerland, M., & Andreadakis, Z. E. (2019). An ecological perspective on learner-constructed learning spaces. *British Journal of Educational Technology*, *50*(5), 2075–2089.

Donohoo, J. (2017). Collective teacher efficacy research: Implications for professional learning. *Journal of Professional Capital and Community*, *2*(2), 101–116.

Foundation for Young Australians. (2016). *THE NEW BASICS: Big data reveals the skills young people need for the New Work Order*. Foundation for Young Australians (FYA). http://www.fya.org.au/wp-content/uploads/2016/04/The-New-Basics\_Update\_Web.pdf

Foundation for Young Australians. (2017). *THE NEW WORK SMARTS: Thriving in the New Work Order*. Foundation for Young Australians (FYA). https://www.fya.org.au/wp-content/uploads/2017/07/FYA\_TheNewWorkSmarts\_July2017.pdf

Fullan, M. (2019, April 22). Why Pedagogy and Politics Must Partner. *Education Week*. https://www.edweek.org/education/opinion-why-pedagogy-and-politics-must-partner/2019/04

Fullan, M., Cuttress, C., & Kilcher, A. (2009). The principal and change. *The Challenge of Change: Start School Improvement Now*, *2*, 55–70.

Fullan, M., Quinn, J., & McEachen, J. (2017). *Deep learning: Engage the world change the world*. Corwin Press.

Hargreaves, A., Boyle, A., & Harris, A. (2014). *Uplifting leadership: How organizations, teams, and communities raise performance*. John Wiley & Sons.

Hattie, J. (2015). High-Impact Leadership. *Educational Leadership*, *72*(5), 36–40.

Herrmann, A., & McFarland, C. (2019). *Future workers: Computer science, apprenticeships and soft skills: lessons in education and training from the United States*.

Kariippanon, K., Cliff, D., Lancaster, S., Okely, A., & Parrish, A.-M. (2018). Perceived interplay between flexible learning spaces and teaching, learning and student wellbeing. *Learning Environments Research*, *21*(3), 301–320. https://doi.org/10.1007/s10984-017-9254-9

Kariippanon, K., Cliff, D. P., Okely, A. D., & Parrish, A.-M. (2019). The ‘why’ and ‘how’ of flexible learning spaces: A complex adaptive systems analysis. *Journal of Educational Change*. https://doi.org/10.1007/s10833-019-09364-0

Lamb, P. S., Mare, D. Q., & Doecke, E. (2017). *Key Skills for the 21st Century: An evidence-based review* (p. 6). NSW Department of Education.

Mulcahy, D., Cleveland, B., & Aberton, H. (2015). Learning spaces and pedagogic change: Envisioned, enacted and experienced. *Pedagogy, Culture & Society*, *23*(4), 575–595. https://doi.org/10.1080/14681366.2015.1055128

Niemelä, M. A., & Tirri, K. (2018). Teachers’ knowledge of curriculum integration: A current challenge for Finnish subject teachers. *Contemporary Pedagogies in Teacher Education and Development*, 119–132.

NSW Department of Education. (2018). *Strategic Plan 2018-2022*. https://education.nsw.gov.au/about-us/strategies-and-reports/strategic-plan

OECD. (2017). *The OECD Handbook for Innovative Learning Environments* (Educational Research and Innovation). https://doi.org/10.1787/9789264277274-en

OECD. (2018). *OECD Education 2030*. http://www.oecd.org/education/2030/

OECD. (2019). *OECD skills outlook 2019: Thriving in a digital world*. OECD. http://www.oecd.org/publications/oecd-skills-outlook-e11c1c2d-en.htm

Office of the Chief Scientist, Baranyai, K., Bowles, J., Hassan, S., Prinsley, R., Smith, P., Walter, C., Australia, & Office of the Chief Scientist. (2016). *Australia’s STEM workforce: Science, Technology, Engineering and Mathematics.* Australian Government - Department of Industry and Science.

Richardson, W., & Dixon, B. (2017). *10 Principles for Schools of Modern Learning*. modernlearners.com. https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj6xK\_3\_ujTAhVEvbwKHbMeBYQQFggmMAA&url=https%3A%2F%2Fmodernlearners.com%2F10-principles-schools-modern-learning%2F&usg=AFQjCNGjDEVPtgMcOlFbgbKHRoHmVDzJhA&sig2=DsdlsAZQ5voa8mX-DJlo0g

Sahlberg, P. (2014). *Finnish Lessons 2. 0: What Can the World Learn from Educational Change in Finland?* Teachers College Press.

Seldon, A., & Abidoye, O. (2018). *The fourth education revolution*. Legend Press Ltd.

Shirley, D. (2009). Community organizing and educational change: A reconnaissance. *Journal of Educational Change*, *10*(2–3), 229–237. https://doi.org/10.1007/s10833-009-9112-3

Southgate, E., Blackmore, K., Pieschl, S., Grimes, S., McGuire, J., & Smithers, K. (2019). *Artificial Intelligence and School Education*. Department of Education, Skills and Employment. https://docs.education.gov.au/system/files/doc/other/ai\_short\_read\_august\_2019.pdf

Toh, Y., Jamaludin, A., Hung, W. L. D., & Chua, P. M.-H. (2014). Ecological Leadership: Going Beyond System Leadership for Diffusing School-Based Innovations in the Crucible of Change for 21st Century Learning. *The Asia-Pacific Education Researcher*, *23*(4), 835–850. https://doi.org/10.1007/s40299-014-0211-4

Welton, A. D., & Freelon, R. (2018). Community Organizing as Educational Leadership: Lessons From Chicago on the Politics of Racial Justice. *Journal of Research on Leadership Education*, *13*(1), 79–104. https://doi.org/10.1177/1942775117744193

Winton, S., & Pollock, K. (2016). Meanings of success and successful leadership in Ontario, Canada, in neo-liberal times. *Journal of Educational Administration and History*, *48*(1), 19–34.

World Economic Forum. (2020). *The Global Competitiveness Report: How Countries are Performing on the Road to Recovery*. http://www3.weforum.org/docs/WEF\_TheGlobalCompetitivenessReport2020.pdf

Young, F., Cleveland, B., & Imms, W. (2020). The affordances of innovative learning environments for deep learning: Educators’ and architects’ perceptions. *The Australian Educational Researcher*, *47*(4), 693–720. https://doi.org/10.1007/s13384-019-00354-y