Beyond Certainty: 
A Process for Thinking About Futures for Australian Education

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August 2018

Commissioned by the Australian Secondary Principals’ Association (ASPA)
Australian public secondary schools serve a pivotal role in our communities across the nation. They enrich the lives of children and young people by helping them to reach their potential, play an active role in civic life and contribute to the economy through work.

Understanding that we are leading our school communities at a time of rapid change and in a world of increasing complexity, the Australian Secondary Principals’ Association (ASPA) commissioned Professor Alan Reid to write a monograph to help us navigate our way through these contemporary challenges. Our interest was in having him provide a resource that will help to spark educational debate and discussion about contemporary policy and practice; propose some ways forward; and provide a reference point for ASPA’s future decision making.

Professor Reid has delivered a document that is rich in ideas. It challenges the certainties of current policy and practice by pointing out that educational decision making is always context specific. Using this understanding as his starting point, Alan proposes a six-step process through which the profession can consider key societal trends and their educational implications, from the perspective of the purposes of education.

From this process, many new and exciting ideas emerge about curriculum, pedagogy, and school and system-wide change. Importantly, the monograph does not suggest that we start again. Rather, it proposes some ways to refine our current curriculum work, and to overcome some of the blockages. In so doing, it provides a common language with which to discuss our work.

Importantly, the monograph affirms to the community all those aspects of public education that contribute to enhancing the learning outcomes of the children and young people, and to building the common good.

The ASPA Board thanks Professor Reid for his work on this significant document. We believe that it will encourage discussion and debate across the educational landscape as together we grapple with the important question of how to maintain, enhance and promote the quality of our wonderful public education systems.

It is in that spirit that I commend this executive summary of the monograph to you.

Andrew Pierpoint
President
Australian Secondary Principals’ Association.
EXECUTIVE SUMMARY

What’s the problem?

From the many voices contributing to debates about policy and practice in Australian education, it is possible to identify two major competing discourses. One is standardising, and favours certainty, uniformity, competition and regulation in education policy. Its policy features include school choice, competition between schools in an education market, high-stakes standardised testing and narrowing the curriculum. The other discourse is futures-focused and prizes flexibility, adaptability, collaboration and agility. Its policy features include student-centred teaching approaches, integrated and project-based learning, inquiry, formative assessment and teacher autonomy.

It is clear that the standardisation discourse is holding the upper hand - and has become instantiated in the framing of education policy in many countries, including Australia. This is despite the fact that in many countries, teachers and educational researchers have demonstrated its negative consequences. They argue that such approaches actually diminish the quality of education, fail to address the challenges of the future, and make it harder for educators to implement a futures-focused agenda.

Not only is such evidence ignored in the public arena, but many media commentators advocate for a hardening of standardising approaches. Politicians and bureaucrats listen to these powerful voices, dismiss futures-focused alternatives, and retreat to the safety of the past.

So why is the standardised approach so dominant? Why is it that the challenges of the 21st century are being met by educational policy that is designed for the certainties of the 20th century? Why have policymakers not been convinced by the many reports and academic papers that argue the need for a futures-focused agenda? In this paper I examine these questions by looking at the literature and various reports that explore the future in Australian education, and conclude that they have not influenced policy because they contain three fundamental flaws.

First, they fail to articulate the purposes of education in contemporary times. Without a detailed declaration of purposes, there is no reference point against which to assess the adequacy of the approaches they suggest. Second, they rarely explore in any depth the social, political, economic and environmental changes, and their implications, that provide the rationale for the strategies that are proposed. And third, they ignore the blockages to any change proposal, particularly those presented by a dominant policy climate based on standardising, certainty and regulation. I argue that a new way must be found to address these omissions and move the debate forward.

What can be done? Towards a process for thinking about futures for Australian education

The basic premise of this paper is that the future is not inevitable: it is fashioned by humans who can either allow events and trends to wash over them and then respond to the effects, or be proactive and try to shape the outcomes. With a commitment to the latter course of action, I suggest that the best way to plan for the future in education is to use a process that allows educators and policymakers, in an ongoing way, to understand, monitor, evaluate and assess broad societal trends and the changes they are bringing.

Such a process is more likely to break the stranglehold of standardising approaches to education policy by providing the evidence needed to substantiate policies and practices that are better suited to the changing environment of the 21st century.

In this paper, I propose a six-step process to address each of the weaknesses common to current approaches. The process assumes an understanding of, and agreement about, the purposes of education and returns to these at appropriate intervals; involves an in-depth investigation of key societal issues and their educational implications; and takes account of the blockages to suggested changes.
Diagram 1 describes the steps of the process. It starts with the selection of a key societal issue or trend to investigate. The first three steps explore the nature of the trend and its impact on the arenas served by the purposes of education – work and the economy, democracy, individuals, and social and cultural life. From this process emerge some implications for the capacities (knowledge, skills and dispositions) that people need to live productively with, and to shape, the identified changes. The second three steps of the process focus on education. Thus Step 4 looks at the implications of the trend for curriculum and pedagogy; Step 5 examines the blockages to any curriculum change suggested; and Step 6 investigates the cultures that are compatible with the suggested changes.

This process is used to inform an analysis of possible futures for Australian education, and to arrive at recommendations for the Australian Secondary Principals’ Association. However, given that it has a wide scope and sweep – it spans the official curriculum, approaches to teaching and assessment, accountability and cultural factors – the process could also be used at system-wide levels, and in schools, for assessing current policy and practices, and thinking about educational futures.

Diagram 1: A process for thinking about futures for Australian education

Using the process to explore a key societal trend for guidance about education and the future

For the purposes of this paper, I selected the third/fourth industrial revolution as an example of a broad societal trend. At the heart of this trend is digitalisation, the impact of which is being realised through such disparate technologies as personal computers, mobile phones, social media, data storage, renewable energy technology, robotics, artificial intelligence, 3D printing, nanotechnology, gene editing, GPS tracking,
autonomous vehicles and so on. These technologies are changing entire systems of work, governance and production in our society. More recent developments such as quantum computing, and the blurring of the lines between physical, digital and biological spheres, have caused some to suggest that we are moving from the third industrial revolution to a fourth industrial revolution. For this reason, the term used in the case study is the third/fourth industrial revolution.

The outcomes of the third/fourth industrial revolution are not predestined: it will be the response of humans that will determine what happens – and education is one of the central elements of such a response if we are to shape, rather than be shaped by, these developments. The key purpose of the case study is to identify the capacities people need to navigate the challenges thrown up by the third/fourth industrial revolution and it is on the basis of this information that the paper examines the educational implications. Thus, the first three steps of the case study examine the nature and impact of the third/fourth industrial revolution from three arenas served by the purposes of education.

- **Work and the economy**: the paper explores the impact of digitalisation and artificial intelligence on the extent, nature and conditions of work in the future, and the kinds of capacities people require to handle such change.
- **Democracy**: the paper explores the effects on elections, political discourse, the quality of information in the public sphere, meta-data and surveillance, and what these mean for the kind of capacities people need to sustain a healthy democracy.
- **Individual, social and cultural life**: the paper explores the impact of digitalisation on individual privacy, social interactions through social media, the effect on human instincts of an increased reliance on algorithms, social disruption caused by economic change, and what these mean for the capacities needed by individuals for personal development, and for social and cultural life.

When the capacities identified in each of these arenas are aggregated, they confirm that in the 21st century, our society needs people who are able to learn both independently and collaboratively; who are open-minded, creative, discerning and critical thinkers with the ability to transfer knowledge and apply their skills to different contexts; who understand the processes of learning and the strengths or weaknesses they bring to them; and who have a disposition for the common good.

How does our society assist people to develop such skills, understandings and dispositions? It is only in educational institutions like schools where these capacities can be taught in a systematic way by people with expertise in the relevant content areas and in the best ways to teach and assess learning. Thus, Steps 4–6 of the process deal with the educational implications of the case study. They reveal the basis of an educational agenda for the future.

**What might curriculum and pedagogy for the future look like?**

The paper describes the implications for two key aspects of formal schooling – what is taught (the official curriculum) and how it is taught and assessed (pedagogy) – that emerged from the case study.

**The official curriculum**

When the capacities identified in the case study are placed side by side, it is possible to group them under four different kinds of interrelated knowledge categories that are integral to an official curriculum for the 21st century. Importantly, the four components cannot be seen or developed in isolation – the deep essence of each can only be fully realised when it is in a dynamic relationship with the other components. Diagram 2 tries to capture the synergy derived from this interrelatedness.
Diagram 2: The dynamic relationship between key components of the contemporary official curriculum

- **Disciplinary learning**: Disciplines are the foundation blocks of knowledge in our society and are therefore central to learning. The other three curriculum components enrich the curriculum by working in and through the disciplines.

- **Interdisciplinary/multidisciplinary/transdisciplinary learning**: Increasingly, new knowledge is generated through the synthesis of knowledge from different specialised disciplinary fields. Thus, ways of understanding and dealing with societal issues and problems can only be achieved if the fundamental unity of knowledge is appreciated, and people are able to work across disciplinary boundaries. The capacity to combine disciplines (interdisciplinary), or draw from a number of disciplines (multidisciplinary), or blend disciplinary knowledge (transdisciplinary) is, therefore, a fundamental capacity in the 21st century. Interdisciplinary knowledge has a symbiotic relationship with disciplinary knowledge.

- **General capabilities**: There are a number of key skills, values and dispositions without which people could not function adequately in our society. In the Australian Curriculum these have been called general capabilities. They are keys to the enactment of disciplinary and interdisciplinary study, and to individual and social practice.
Meta-learning: Meta-learning is the capacity to understand oneself as a learner and the process of learning. It goes beyond metacognition, taking in new understandings about learning in fields as disparate as neuroscience and the functioning of the brain, emotional, sensory and social learning, cognitive psychology, and learning and physical movement. Learning about learning is fundamental in an information/knowledge society where knowledge is expanding at an exponential rate. If learning is a key to living in the 21st century, then understanding the many aspects of learning is crucial. In curriculum terms, meta-learning involves deep reflections on learning as students work with disciplinary, interdisciplinary and capability-based knowledges.

These four components already exist – to a greater or lesser extent – in the Australian Curriculum, and various state/territory-based curricula. Thus, it doesn’t suggest a new curriculum agenda, but rather changes or modifications to what currently exists. This paper explores such changes, including an ongoing review of disciplinary learning as represented in the learning areas; better support for interdisciplinary learning through the official curriculum and resources; identifying the reasons that the general capabilities are still marginal in curriculum work; and expanding metacognition (currently named as one part of one capability) to include recent knowledge about learning from a range of fields, and creating meta-learning as a separate but closely connected curriculum component.

Pedagogy

The sorts of learning outcomes suggested by the case study have implications for the pedagogy of the 21st century. The paper argues that pedagogies of the future hinge on the development of a framework for teaching – a kind of teaching toolkit – which enables teachers to use their professional knowledge by selecting approaches appropriate to the students in their care, the topic or program, and the context. Such a framework should not be imposed or set in stone, but refined and improved through practice, research and professional conversations.

In this way, teachers are seen as curriculum and learning designers, rather than technicians implementing an imposed and tightly controlled curriculum. Such an approach would highlight the impoverished thinking of those media commentators and policymakers who insist that there is just one best teaching approach; or assert that there is a set of variables that promote best practice no matter the context or situation.

I suggest a possible framework which contains a number of elements on a continuum from which teachers select, such as learning orientations, models and strategies of teaching, assessment approaches, and classroom organisation. The idea is that teachers will move across the continuum, piecing together an approach to teaching a particular aspect of the official curriculum, such as a concept, theme or topic, for a particular group of students. The framework is based upon a set of teaching principles, and values and practices for establishing and nurturing a classroom environment, which are consistent with what emerged from the case study.

It is important to note that the framework is not exhaustive or complete, it is illustrative only of the possibilities for theoretically sound, practical and flexible pedagogical guidelines that could form the basis of an ongoing professional conversation. Crucially, it demonstrates the serious limitations of the current debates about teaching quality and standards, that appear to assume that decisions about pedagogy are an either/or proposition.

What is needed to introduce the kinds of curriculum and pedagogical changes suggested?

Many proposals for curriculum and pedagogical change don’t take account of the environment into which they are introduced. Thus, if there are policies and practices that are inconsistent with curriculum changes, it is unlikely that the change will result in the outcomes planned until the blockages are identified and removed. Conversely, the changes are more likely to be introduced successfully if there is an environment that is consistent with, and conducive to, the changes. This paper deals with both these scenarios.
Blockages to change

Obstacles to change can be present within the focus of the change itself (in this case the intended curriculum and pedagogy), and by the established practices and cultures into which they are introduced. Some obstacles are obvious, others can be difficult to detect because they have become so much a part of the dominant grammars of an organisation, embedded in its culture and taken-for-granted practices. They can be present in classrooms, schools and education systems as-a-whole.

In this paper, I address both sorts of blockages. I look at some long-held curriculum beliefs and pedagogical practices that are incompatible with the changes proposed. These include such matters as the belief that rigour is only equated with disciplinary learning, the predilection for teaching packages that provide the answer, and the insistence that teaching involves a single choice between teacher-centred explicit instruction or student-centred inquiry. Until such misunderstandings are consigned to the past, a futures-focused curriculum and pedagogy will always struggle to take root.

The paper also addresses the systemic practices and cultures that are incompatible with the curriculum and pedagogical changes proposed, not least because they serve to perpetuate the myth of certainty. At a time when – as the case study demonstrates – humans are facing significant challenges and exponential change, the dominant official educational response has been to resort to the safety of standardised testing, education markets, league tables and scripted teaching. Unless such policies are challenged, they will mould any introduced curriculum change in their likeness.

At the heart of this regime of certainty is an obsession with data, often manifested and justified under the banner of evidence-based policy. Data makes an important contribution to any education system wanting to track progress and review programs; however, when narrow forms of data are used to make snap judgements about quality, ignoring the range of factors that contribute to educational outcomes, and narrowing the focus of what is important, then it works against quality.

In the paper I use the Programme for International Student Assessment (PISA) as an example of an instrument that purports to precisely calibrate and measure educational outcomes, but which only ends up distorting, narrowing and standardising education. Given what is now known about assessment and evaluation in education, it is surely possible to develop more enlightened approaches to assessing education outcomes – both in Australia and internationally – than conducting standardised tests in a small range of subjects.

Cultures that sustain and promote change

It is not enough to just remove the impediments to change. If the change is to occur in more than name only, then there must also be a set of supporting conditions. The most important element of the supporting conditions is consistency between the changes and the culture into which they are introduced. This means ensuring that the values and practices of schools and the system do not exude characteristics incompatible with the change. Even the most dynamic change ideas will founder on the rock of an incompatible culture. The paper explores two important aspects of culture needed for the curriculum and pedagogical changes suggested.

A culture of research and inquiry

The case study shows that since many of the issues facing educators today are context-bound, they are not amenable to universal solutions. That is, educators face the considerable challenge of designing curricula for local contexts that are flexible enough to address the rapid growth of knowledge, and that recognise the increasing religious, cultural and ethnic diversity in their student populations. In the 21st century, therefore, educators need to be inquirers into educational practice who can question their routine practices and assumptions, and who are capable of individually and collaboratively investigating the effects of their teaching on student learning. From this perspective, educators are people who learn from teaching, rather than people who have finished learning how to teach. A culture of research and inquiry requires education systems to shift
away from the dominant managerial model of top-down educational change, to one that uses the knowledge created by teacher- and student-led inquiry in schools as an important ingredient in the policy mix.

A culture that promotes and sustains the characteristics of public education

One of the key insights emerging from the case study on the third/fourth industrial revolution is that all citizens should possess the understandings, skills and dispositions to promote the common good in our society. That is, so many of the challenges today demand that people have a commitment to the collective good, rather than a sole interest in what will benefit the individual. There are at least two key aspects to consider. The first is to create and maintain a system of education that itself models a commitment to the common good. This includes ensuring that education is available free to all on a comparatively equal playing field and on a non-exclusionary basis, and has policy and practices consistent with, and promoting of, the common good in education.

The second aspect relates to the role of education for the common good. This involves schools developing the skills, dispositions and understandings of children and young people, such that they can engage – respectfully and thoughtfully – with others in deliberation about the common good in the broader society. The paper explores a number of characteristics that promote the common good and that are embedded in the essence of public education – equity, diversity and cohesion, trust and collaboration, democracy, and so on – and that need to be sustained and promoted by systems and schools. Policies designed to make public schools behave as though they are private are counterproductive because they are destroying the very qualities and characteristics needed for education systems to meet the challenges of the future.

Reflections on the process and on school leadership

The paper concludes by reflecting on the problems and possibilities evoked by the model that was used as the vehicle for understanding the curriculum and pedagogical changes suitable for the 21st century. It also considers the kind of educational leadership needed to introduce such an agenda in schools and systems, focusing particularly on the political skills and understandings required in a highly charged political environment.

The development and practice of the approaches suggested in this paper cannot be achieved without collegial and resource support. This makes the role of professional bodies like the Australian Secondary Principals’ Association crucial to the success of the kind of educational program that is recommended, and thus to Australia’s educational futures.
### The Findings

- **Beyond Certainty**
- **A Process for Thinking About Futures for Australian Education**

### The Analysis

- **The Process in action**
- A six-step process which enables ongoing review

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<th>Kind of education needed:</th>
<th>Establishing a culture to promote and sustain the</th>
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<td>- Recognising and promoting the characteristics of public education</td>
<td>- Developing a school and system-wide culture of research and inquiry</td>
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<td>- Review of the literature, policy and reports</td>
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<td>- Identifies and responds to the challenge of contemporary times</td>
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<td>- Establishes the purpose of education</td>
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<td>- Recognises the complexity and uncertainty of contemporary times</td>
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### A Process for Thinking About Futures for Australian Education

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The ASPA Board thanks its State and Territory affiliates for their support of this important work.