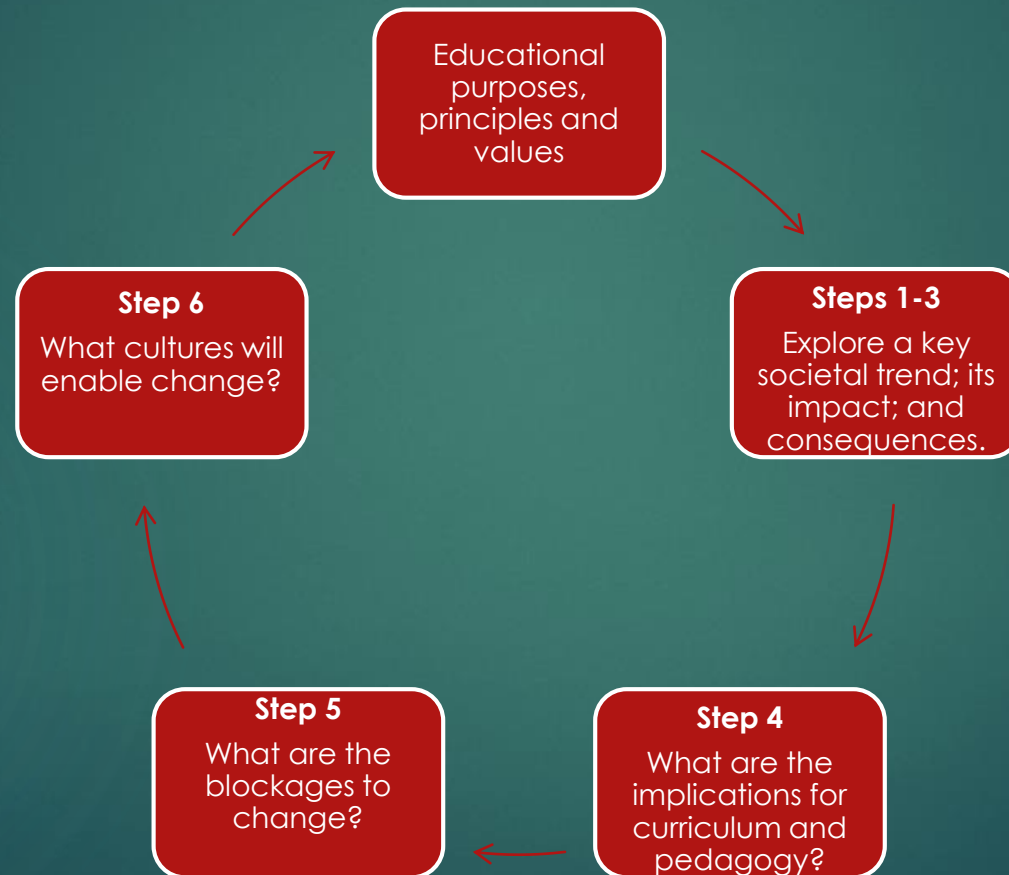# Reflections on AI: What does it tell us about futures for Australian education?

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A six step process for identifying the kinds of educational approaches best suited to meeting the challenges of the future

The argument so far

To break the stranglehold of the standardising agenda, we need a new and powerful educational narrative which is based on agreement about three key elements:

- the **purposes** of education;
- **principles** and values;
- a **process** for understanding the challenges of the world for which we are preparing children and young people, and for deciding on the educational approaches which will best meet them.

Trialling the process: A case study of the 4th industrial revolution

Step 1: What is the 4th industrial revolution?

- Previous industrial revolutions liberated humankind from animal power, made mass production possible and brought digital capabilities to billions of people. This Fourth Industrial Revolution is, however, fundamentally different. It is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human (based on Schwab, 2015)

Step 2: What are the implications of the 4th industrial revolution?

The emergence of the 4th industrial revolution has implications for:

- the ***economy*** – e.g., changes in the nature, type and extent of work;

- ***individuals*** - impact on such aspects as e.g., privacy; social isolation; self-esteem; trolling and cyber-bullying; and deskilling;

- ***social and cultural life*** – e.g., possible impact on multicultural cohesion through such avenues as racial and gender bias of algorithms; or increasing unemployment wrought by technological change;

Step 2 (cont): What are the implications of the 4th industrial revolution?

- ***democracy*** – impact on key aspects of democratic life such as

  - interventions into elections by other countries;
  - manipulation of voters through hyper-targeting;
  - fanning individual self-interest rather than the common good;
  - Fragmentation of spaces for public discussion; 24/7 news cycles;
  - silos of sameness – bias confirmation through echo chambers;
  - lack of civility and respect in community discussion;
  - 'fake news' and 'deep fake';
  - meta-data and surveillance;
  - spaces for public discussion in private hands.

Step 3: What understandings, skills and dispositions do people need to respond to the implications of the 4th industrial revolution?

Example of the **democratic** purpose of education

► **Knowledge about democratic life**: An understanding of and commitment to democratic institutions and the processes which sustain democratic life at the local, national, regional and global levels;

► **Skills for civic and political engagement**: e.g.,

- skills of scepticism and discernment;

- skills and commitment needed to engage in respectful discussion across different groups;

- local and global thinking

► **Dispositions for civic and political engagement,** e.g.,

- a commitment to the common good

- computational ethics

- compassion and care, empathy etc.

Step 4: What are the implications for curriculum?

Four kinds of learning should be represented in the official curriculum

- ▶ Disciplinary learning

- ▶ Interdisciplinary learning

- ▶ General Capabilities

- ▶ Meta-Learning

A dynamic relationship between components of the official curriculum

Figure 1: The dynamic relationship between key components of the contemporary official curriculum

Meta-Learning

Disciplinary Learning

A contemporary curriculum

Interdisciplinary Learning

General Capabilities
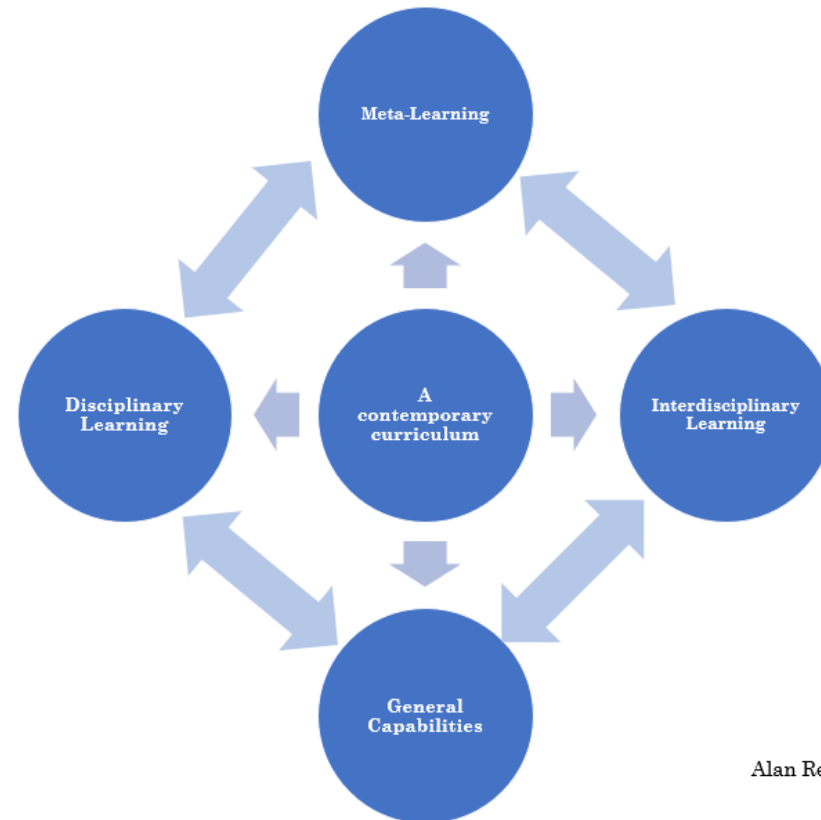
Alan Reid, 2018

Step 4 (cont): What are the implications for pedagogy and assessment?

Educators need to be able to draw from a toolkit of teaching models and approaches which:

- ▶ span a range of approaches to learning;
- ▶ enable teachers to adapt their teaching to suit different contexts, topics, and student needs;
- ▶ have a solid research base.

Step 5a: What are some blockages to curriculum change?

- ▶ Blockages include such issues as:
- - The binary of disciplinary and interdisciplinary learning;

- - Undeveloped understandings about the nature, role and purposes of the general capabilities;

- - The fragmented approach to understanding learning and the predilection for silver bullets;

Step 5b: What are some blockages to pedagogical change?

- ▶ Blockages include such issues as:

- - The dominant tendency to view teaching approaches as a choice between explicit instruction and inquiry;

- There are two dominant types of teaching practices. The first is 'teacher-directed instruction,' in which the teacher explains and demonstrates ideas, considers questions, and leads classroom discussions. The second is 'inquiry-based teaching,' in which students are given a more prominent role in their own learning—for example, by developing their own hypotheses and experiments. We analyzed the PISA results to understand the relative impact of each of these practices. In all five regions, when teachers took the lead, scores were generally higher, and the more inquiry-based learning, the lower the scores. (Mourshed et al., 2017)

Step 5b: What are some blockages to pedagogical change?

- ▶ Blockages include such issues as:

- The dominant tendency to view teaching approaches as a choice between explicit instruction and inquiry;

- The appropriation of progressive ideas for instrumental purposes (eg personalised learning).

Step 6: What cultures will enable change?

▶ A culture of research and inquiry

▶ A culture which promotes, models and sustains policies and practices that are consistent with the agreed purposes, principles and values:

- An ethical and socially just culture

- A democratic culture

- A collaborative and community-based culture

- A culture of diversity and cohesion

- An innovative culture

Elements of a new educational narrative

- Purposes
- Principles and values
- Process which enables

- an ongoing evaluation of curriculum and pedagogy, including an identification of the blockages to agreed change;

- recognition of the cultures and environment needed to support and sustain the kind of curriculum and pedagogy agreed upon.

What's needed to establish a new educational narrative?

▶ Bi-partisan political agreement about the purposes, principles and values upon which Australian education is based. A revamped 'Goals of Australian Schooling' is an ideal vehicle for this agreement;

▶ A commitment to using the agreed purposes, principles and values as the reference point for policy making and practice;

▶ The development of processes – at the levels of systems and schools - which will enable Australian education to deal with the rapidity of societal change;

▶ A recognition of the importance of involving educators (teachers, principals, professional associations and unions) in policy making.