



Public submission made to the Review to Achieve Educational Excellence in Australian Schools

Submitter: McGrath, Jason
Submitting as a: Principal, Academic person or institution
State: NSW

Summary

We should adopt an obsolescence mindset to create change for educational success.

Learning at school should be predominately student centred with teacher centred approaches limited to specific purposes. It is essential that teachers have a key role to check understanding before learning is applied by students.

The further a student is away from the average the less relevance for current standardised assessment approaches. Assessment should be driven by formative approaches which allow students to articulate their own progress and goals. As we move away from an industrial model of schooling there should be more scope for personalisation, nurturing of broader understandings of talents, and an assets based approach to measuring educational success.

Main submission

My submission is informed in general by over 25 years of school education experience and, more particularly, relates to current PhD studies investigating the overall research question “What if compulsory schooling was a 21st century invention? School Scenarios of the Future through a Counterfactual Analysis”. The methodology utilises foresight strategies and anticipatory models that are featured in government and inter-government organisations such as UNESCO.

I highlight below some ideas from my first two papers which are at peer review and draft stages. The first paper is co-authored with Professor John Fischetti (University of Newcastle). The paper is based on two systematic reviews of 102 empirical pieces of literature in total, covering the 21st century, investigating (a) student versus teacher centred learning approaches (N=26) and (b) standardised versus formative assessment approaches (N=76).

Some key ideas from paper one are:

- A case is made for the planned or strategic use of obsolescence by school leaders and policy makers about how schooling could be redesigned by focusing on approaches that might be “abandoned” (Drucker, 2007) and ensuring change strategies are applied at both “institutional” (Elmore, 1996) levels and the “fine grain of practice” (Elmore, 1996)
- Both of the systematic reviews found a lack of large scale, long term studies that sought to either compare didactic teaching with alternative approaches or formative assessment strategies for teachers across a system.
- The research did highlight some advantages of teacher centred approaches to support lower level students. The research also explores whether students from lower socio-economic backgrounds are exposed to more didactic teaching
- The research suggests that middle and upper band students are more likely to be advantaged from student centred approaches, particularly when the teacher checks understanding and corrects misconceptions early in the learning process. The role of the teacher in this approach needs further research and development
- Four out of six studies that utilised a student control group and analysed academic outcomes found significant positive difference for the experimental group which focussed on student centred approaches. The two studies that found no significant difference in results both involved different software technology interventions over a period that lasted only a two week period
- Seven studies found positive improvements in affective outcomes or student responsibility for their learning in the classroom when student centred approaches are utilised
- Four studies found students preferred a technology rich classroom environment, even when learning outcomes were not enhanced
- Studies that explored teacher perspectives found general support for more student centred approaches but found it took in some cases 18 months before changed practice was embedded.
- Standardised assessment may better gauge top end performance and push for improvement in general but is more likely to promote shallow, test focused pedagogy. Assessment for learning approaches requires support to professionally develop staff and ensure consistency but can lead to learning that sticks
- Two US studies found more testing type teaching approaches were targeted at “regular” stream students compared to “gifted” stream in the same school

or were more likely to be the focus of classrooms with students from diverse cultural backgrounds

- A few US studies found some improvement in results through setting of targets as the driver for change. This mainly occurred when increased resources were involved or were found to be proxy measures for school improvement approaches. Some US targets could not be achieved by countries such as Singapore
- One study found an assessment as learning approach led to increased outcomes that were greater than for the control group six months after the topic was taught (with less difference noticeable immediately after the topic or at the two month post testing), highlighting the depth to which thinking was reshaped for the experimental group.
- One study found positive connections between formative assessment approaches and indigenous ways of knowing
- A few studies suggested that standardised assessment tended to lead to criteria compliance and limited the development of advanced learners to achieve the very top part of the assessment matrix
- Other assessment approaches, based on normative and criterion approaches, could be explored to broaden current thinking
- A few studies highlighted the potential for technology to support assessment processes or at least be equivalent to current approaches.
- Four scenarios are offered in the paper based on the systematic reviews:
 - 1) the current systems hold on for another generation whilst individual parts of the sector evolve as alternative or experimental areas of change and there is a sense of change occurring without clear direction or alignment between policy makers and teacher practice. Countries like Singapore, South Korea, parts of Canada and Finland who already operate with at least a partially developed obsolescence mindset will continue to evolve. Countries such as the UK, the US and Australia are vulnerable to pockets of change and not truly embracing the obsolescence framework to create focus on new directions and approaches
 - 2) obsolescence theory drives change in the places that are already serving the highest levels of the socio-economic status, wealthy suburbs, selective, independent and private schools who can opt out of the focus from high stakes assessment schemes because the wealth of the families who attend their schools has purchased mastery of basic literacy and numeracy by way of advantage. The UK, US and Australia are particularly vulnerable to this scenario

- 3) There will be an increased prevalence of technology solutions being offered to teachers and educational systems that can support current teacher work-some may simply substitute what can be currently done and could risk embedding poor pedagogical practices while others may genuinely offer transformational approaches that redefine teaching and learning options, including possibly supporting the checking of misconceptions as part of student centred learning
- 4) an alignment in direction between policy and practice for the next phase of the 21st century. The focus is on embedding a new obsolescence mindset in order to recreate the role of the learner and teacher. Some weak signals in the renewal of the learner and teacher role explore ways for students to “internalize the basic education... concepts” (Ajiboye & Ajitoni, 2008, p. 64) of a topic before they enter into the student led parts of learning- this could be linked to reconciling misconceptions (Blank & Hewson, 2000; Confrey, 2012) and variation theory (Marton, 2014)

It is clear that if schools were invented in the 21st century, very few buildings would be built with didactic teaching as the prominent style of form and structure.

As a catalyst, a set of ‘inverse drivers’ relating to policy and practice should be identified to instigate planned obsolescence in order to create, space, energy and momentum for achieving a new mindset. To ensure confidence for all stakeholders in the value of schooling, and as an enabler for this new mindset, a research base should be developed that is longitudinal, compares new approaches to the status quo and brings together practitioners, policy makers and researchers.

The purpose of the second paper is to utilise anticipatory approaches to conceptualise how compulsory schooling might be different if it was a new invention. Contemporary catalysts for remodelling compulsory schooling include neuroscience, sustainable building and community design, technology and postmodern and indigenous ways of thinking. As well as conceptualising how school might look today if it had been created today for the first time it is also important to consider possible side effects from any change ideas as part of research practice (Zhao, 2017).

Some aspects of this paper may be beyond the scope of this review. However, some key ideas from paper two that are relevant include:

- in relation to the role of the teacher and learner, if schooling had been invented after the MRI and neuroscience, the role of the teacher might be recast as one of “neuroengineer” (Chapman, Gamino, & Mudar, 2012). This work emphasises that the way the brain is used regularly is how it develops- if we are aiming for more advanced learners then it needs to be a regular

feature of teaching. Approaches, such as Variation theory (Marton, 2014) could inform teaching practice

- the potential for developing a “pedagogy of relatedness” (Holmes, 2014, p. 98) , drawing from indigenous ways of knowing, to reveal a teacher-student relationship that is more holistic and all-encompassing in terms of curriculum knowledge, learner well-being and personal growth
- Barrett et al. (2015) use a Multi-Level Modelling (MLM) to measure the impact of design of primary classrooms on learning outcomes in reading, writing and Mathematics. The study involving 3766 students from the United Kingdom found that physical characteristics of classrooms could explain 16% of the variation in learning performance and that individual classroom design was more important than whole school factors such as size or the extent of facilities. The study analysed the impact of three physical characteristics – Stimulation, Individualisation and Naturalness (SIN design principles).
- Changing work practices of families, including greater flexibility, greater work from home options, as well as more radical ideas about a decentralised city, offer other opportunities to consider schooling of the future.
- The purpose of schooling could be seen as a focus on the skills including the “4Cs” (Trilling & Fadel, 2009) of creativity, critical thinking, communication, and collaboration skills. An extension of creativity is the promotion of entrepreneurialism (Zhao, 2012). Other ideas are also added such as character development, cross-cultural understanding, computing and ICT literacy (Trilling & Fadel, 2009) and meta-learning
- A more far reaching purpose would be to focus on human endeavour to be able to solve some of the challenges of our society. This might also consider the place of life-long learning, the earlier start and longer length of adolescence (Steinberg, 2014), and a recognition that it is through schooling that we are able to share advances in our human intelligence at a faster rate than evolution (Marton, 2014).

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