



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

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Submitting as a: Academic person or institution  
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### Summary

I wish to address the theme “What students learn and how they learn”. A large number of collaborators from around the globe and I have spent several decades working on this issue using cognitive load theory. This theory uses our knowledge of human cognition to devise novel instructional procedures that are tested using randomised, controlled trials. A particularly good, highly intelligible summary was published recently by the NSW Department of Education’s Centre for Education Statistics & Evaluation (August 2017 – available from their web site). The theory suggests instructional procedures at variance to many of the procedures currently used in Australian education.

### Main submission

I wish to address the theme “What students learn and how they learn”. A large number of collaborators from around the globe and I have spent several decades working on this issue using cognitive load theory. This theory uses our knowledge of human cognition to devise novel instructional procedures that are tested using randomised, controlled trials. There are many summaries available of this theory and its instructional implications with one of the shorter ones coincidentally paraphrasing this Review theme in its title (Sweller, 2015). A particularly good, highly intelligible summary was published recently by the NSW Department of Education’s Centre for Education Statistics & Evaluation (August 2017 – available from their web site). Because of the many summaries of the theory, I will not summarise it here but would like to make the following brief points.

About 3-4 decades ago, a new movement began to sweep the education world, especially the Anglo-sphere world. It went under a variety of names: discovery learning, constructivism, and more recently, inquiry learning. While the name changed from decade to decade with inquiry learning being the most recent variant, the basic assumptions and procedures were constant. The movement was based on the assumption that the “natural” learning procedures that we use outside of the

classroom should also be used in the classroom. The key assumption was that students are natural learners and all teachers had to do was channel that natural learning propensity in the right direction. Explicit instruction was firmly eschewed.

This view of learning was not based on our knowledge of human cognition, indeed, it routinely ignored everything that we know of human cognition. Neither was it based on tests using randomised, controlled studies with many of its proponents objecting to the use of tests, or of quantitative studies of any kind.

It took time for this view to gain traction but now it is firmly established in Australian education. The rise of this movement seems to be correlated with the fall in Australia's rankings on comparative international competency tests. Based on cognitive load theory, there is every reason to suppose that the correlation is due to causal factors. The results of cognitive load theory-based randomised, controlled trials, designed to determine causality, consistently indicate that explicit instruction, along with the many other prescriptions of the theory, facilitate learning. Without a change in instructional procedures, I expect our fall in the rankings to continue. I hope we change direction.

Sweller, J. (2015). In academe, what is learned and how is it learned? *Current Directions in Psychological Science*, 24, 190-194.