

# Submission to Parliamentary Education and Innovation Committee

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## 1 Standards in Decline

From my own observations, standards in mathematical ability of Queensland high school graduates are in decline. Thanks to a weakening of the entire assessment system, which needs urgent review, the very status of mathematics as a scientific discipline is being eroded.

## 2 Assessment Techniques

Page 29 of the Mathematics B Senior Syllabus Document [1] lists 3 categories of assessment, with “supervised tests” placed last in the list, clearly indicating the downgrading of this important, objective assessment instrument, in favour of unreliable and subjective methods. The so called “extended modelling and problem solving tasks”, and “report” categories are being over-emphasised to the detriment of standards. Page 29 of the syllabus document [1] also stipulates the inclusion of at least 2 such assessment pieces per year, while no such requirement is applied to “supervised tests”. Furthermore, in the description of “supervised tests” on page 31 [1], there is no mention of fundamental mathematical constructs such as proofs or derivations, allowing considerable scope for subjectivity and consequent weakening of the instrument.

“Standards associated with exit criteria”, presented as tables in Section 6.9 of the syllabus [1], are clearly designed to accommodate the “extended modelling and problem solving tasks” and “report” categories. These tables are excessively verbose, complicated and repetitive, presenting difficulty for both students and teachers. In attempting to address these standards, many students will be diverted from the fundamental issues of understanding and applying mathematics. The high emphasis placed on “technology”

is misguided, and potentially destructive. Are students learning how to draw graphs on calculators, or the underlying mathematical theory behind the graphs?

### **3 About the Author**

The author of this submission is a Queensland high school graduate with postgraduate qualifications in mathematics, and 20 years of career experience in government scientific agencies and universities in Australia and abroad.

### **References**

- [1] Mathematics B Senior Syllabus Document, Queensland Government, Queensland Studies Authority (2008).