SMC&PA Submission 123
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To: The Education and Innovation Committee eic@parliament.qld.gov.au
From: Bob Harvey [redacted]

Dear Committee Members,

I have been teaching mathematics for 38 years in various schools, both country and urban, as well as in both disadvantaged and well-resourced schools. I have taught under both an external examination system and three incarnations of school-based assessment. I feel very uneasy about the QSA and their approach to assessment which has significant negative impacts on student learning and understanding even though the syllabi have been crafted with the best of intentions.

I request that all personal contact details, other than my name, be removed from my submission. To make this task easier, I have typed this in red.

My submission is written to respond to the three categories being addressed.

Ensuring assessment processes are supported by teachers.
In every school where I have been employed teachers do their best to abide by the guidelines issued for assessment. The subjective nature of verbal descriptors means there is inconsistency in interpretation among staff when setting items, thus leading to the need for meetings to "thrash out" an agreed position before administering this. Often the allocation of a level of difficulty can be overturned on reflection when students interpret the item very differently. Ignoring the extra time commitment this needs, the assumption that all schools have the experienced staff members who willingly make time to do this is flawed. All of this leads to inconsistencies between schools and districts , while adding considerable stress to beginning teachers who aren't in schools where support is available.

Following completion of the item, the next problem is assigning a letter grade to a student's submission based on a general descriptor. For higher grades this invariably revolves around discussion of assumptions and limitations of a model involving mathematical concepts only recently introduced to the student. Where does a student gain the deeper understanding necessary for this? – why, by a decent length of time and range of situations where these concepts are used! The assumption that this occurs is addressed under the next category.

The teacher must now make a judgment whether the lengthy, explicitly stated submission of the student with exceptional writing skills (or whose parents can pay someone to "assist" in this process for non-supervised elements) is worth the same as the concise, implicitly written response of the child who is an unsupported, left-brained, analytic person who cannot see the need to write about what is totally self-evident to both you and your student, and hence does this reluctantly and probably not as well. Teachers who see the mathematical construct as the main purpose will give a different grade to the teacher who likes the passage to scan/read easily without the need for the mathematics to be as exacting or elegant. The same dilemma exists when this material is submitted to panel leading to inconsistent feed-back depending on who reviews the student's work.

The inconsistencies lead to mistrust by teachers of the assessment process where the higher grades are concerned. Perversely, there is almost no disagreement where the "Sound" or "Pass" level is concerned since everyone at panel level seemingly concentrates on the mathematics demonstrated in a student's work.

My final observation is that most teachers in Queensland have only experienced the current system and have no basis for comparison with other means of assessment. When asked if they are satisfied with the current system, most will reply in the affirmative since they know nothing else.

Student participation levels.

I would like to address the assumption that students have the opportunity to become familiar with concepts before attempting assessment items requiring deeper understanding. This is only possible when time is allowed to confront a wide range of examples of varying complexity involving a concept. QSA and the Australian Curriculum documents correctly identify the need for a minimum number of classroom hours necessary to cover a body of work. I would be extremely surprised if any school came close to completing these suggested hours due to all the other "necessary" components of a school's offering such as visiting performers, field trips and excursions, sports days and such activities. This is related to school management and is beyond the scope of this committee, but does impact directly on students and their time for a subject. Students used to be able to cope with lost class time by getting the extra exposure through homework. The overbearing load of written assignments (now in every subject and quite extensive in scope) means that apart from the first two weeks of any semester, students have two or three assignments (by all their names) running concurrently and this requires most out-of-class time to be devoted to this. The concept of continuous assessment (early school-based assessment) has now morphed into continual assessment where little or no consolidation time is possible for the majority of students who are not efficient researchers, nor quick thinkers or fluent writers, if they are to complete the assignment load.

Students who drop out of Science and higher level Mathematics subjects (or don't opt for them after getting advice from older acquaintances and siblings) would be more likely to persist without this impost. Participation rates in Science, Mathematics and Foreign Languages would be far more likely to be maintained if they had this time to use for consolidation rather than for assessment.

Within my own household I have observed the effects of the changing nature of assessment and its unintended consequences. My first two teenagers (mostly left-brained) who enjoyed the immediate positive feedback of "getting the answer" when doing a range of problems in their Mathematics and Science subjects and not being burdened by worrying about whether their written answers were adequate for extended responses, had time to participate in sport and cultural activities, do homework and rarely worked late at night and were rarely sleep-deprived or tired. The next two had to suffer the new regime and, not being particularly fluent writers, regularly had to be ordered to bed, worried more and were frequently sleep-deprived if parents fell asleep before them.

My final observation on this component is that humans work well under intermittent periods of stress but not under continual stress. Yes, examinations in a short period of time result in some stress but can be accommodated by most students as they occur in a finite period and have finite times for doing the task. The current system means no limits are obvious to students with the conscientious ones seeing more time input means better grades and hence work far too long "polishing" written submissions to the detriment of consolidating work.

The ability of assessment to support valid and reliable judgments of student outcomes.
My biggest reservation concerning the importance placed on assignments for obtaining grades is the lack of verification of provenance when considering how much of the work is really owned by the student submitting it. Frequently this is the best piece of work by far. Language which is not normally used by a student is present and is often accompanied by sophisticated analysis which has never been shown by this student elsewhere. This means that a lot of the credit assigned to a student reflects their ability to get someone else to assist them or even do tasks/analysis for them, for example parents, siblings, clever mates or tutors. The inequity is even more obvious where a part-time job by the student is needed to assist the family unit financially. E.g. split families, single parents, and grand-parents as carers.

Unfortunately not all new teachers of Mathematics have sufficiently broad backgrounds in the subject nor do they have experienced teachers at their school to help them and this is reflected in what they see as discriminating questions/tasks. Because the QSA descriptors are subjective, they believe the grades they assign are correct and inform the students. When this assessment goes to Panel, the students are the ones who suffer if they are necessarily "downgraded" since evidence of this level of attainment is not part of the package. This also causes great angst/disappointment in the teachers who believed they were following the requirements of the syllabus.

The committee would do well to ask parents and students whether they see this system as reliable, understandable and transparent. The students don't think so and are constantly asking questions such as, "What does six "A"s, seven "B"s and five "C"s mean?" Some submissions give this a VHA, while others are certain it's an HA. Since the criteria are subjective you can reasonably argue both trains of thought. Many "consumers" of the system could justifiably think that teacher bias decides the final grade. No prescriptive, state-wide system exists so it comes down to which argument wins at Panel level.

For Mathematics, I support state-wide examinations set by practising teachers and collated by a small group of experienced teachers. The system used for "A" levels in the UK would be suitable. Teachers and interested university personnel are invited to submit items for inclusion. Acceptable items are remunerated (e.g. $200 per item) and from these the external examination is generated by a group of experienced teachers. The assessment should be a rigorously supervised external examination with one or two papers (similar to the QCS supervision), where the results are compared to an internal assessment and ranking done by the school. Any obvious anomalies are checked and special consideration given if the situation warrants. (E.g. a parent diagnosed with cancer and position in the group drops

dramatically). In this internal assessment, an Experimental Investigation/Assignment may be used but should contribute no more than 10% of the final total.

Thank you for considering this submission.