

Education and Innovation Committee

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To: The Education and Innovation Committee eic@parliament.qld.gov.au

From:

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Dear Committee Members,

I have been teaching mathematics and physics for 10 years.

I am concerned that the QSA will be unhappy that I have made a submission to the Education and Innovation Committee and deal with me and/or our future submissions prejudicially as a result. I therefore request that **all names and contact details** be removed from my submission. To make this task easier, I have written all names in red.

Assessment Methods for Senior Maths, Chemistry and Physics

a) Ensuring assessment processes are supported by teachers:

As an experienced teacher of Physics and a Panellist, I, and my fellow Physics teachers do not support the assessment processes. I feel that the only positive we have under the current system is that the process of continued assessment over the year spreads out the stress levels of the students when compared with end of year final examination (of course this does mean that a process of continued stress can and does occur in some students). It does, however, lead to a cram and forget culture where knowledge is for a short term and then we move on. Extended Experimental Investigations and Extended Response Tasks are often not supported by teachers as valid for a range of reasons.

Firstly, there is the concern of ownership of the work submitted. There is no way to tell if the student has completed all the work themselves. Also, the time lost to conducting these tasks could have been

allocated to covering a far greater range of Physics topics. While students are spending many weeks collecting data and completing their EEI on one narrowly focused relationship, say, Doppler Shift, singing wine glasses, string and wind instruments to give a few examples, a far greater understanding and ability to correctly solve far more complex scenarios could have been achieved in a fraction of the time.

Teachers' lack of support for the processes involved with panel submissions stems from many issues. Starting with the review of independent work programs from individual schools for approval and the range in experience in panellists and interpretation of the syllabus document have led to inconsistencies between what gets approved and what does not. Very recently, a task that had been approved for 5 years as an EEI was rejected by a new panel chair, again based on interpretation.

At Panel training in-servicing I have not had a facilitator who had any Physics background. No Physics exemplars have been given and the one chemistry exemplar was not allowed to be copied or removed. These sessions were seen to be a waste of time.

The following is a justification of why teachers do not support the assessment process:

Statistically, the number of samples submitted to represent a cohort is concerning. For large schools with large cohorts there is a large opportunity to manipulate the sample in several ways. With very few samples required and no serious auditing of students identity, "Sample A, B, C,... or which samples schools decide to send is not prescribed. Panellists are paid approximately $\frac{1}{2}$ the rate of a tutor and for 2 hours to review $\frac{1}{2}$ a schools sample. Panellists may choose to complete the sample out of sense of duty, but thorough checking requires far more time, particularly when top samples may take a great deal of time to complete. Our panel has accepted that "A" standard work cannot be completed in 1500 to 2000 words, in Physics "Complex and Challenging" in an EEI has led to over 50 page submissions on several occasions, in excess of 12,000 words. Current students have told that they are spending 50 to 70 hours outside school writing up EEI's to try to get to the A and A+ standards, then doing the same in Chemistry. Absenteeism around due dates is predictable and has led to school practices such as mandatory progress checks and drafts. There students often are doing the same in Chemistry. This leads the panellist to complete well over 2 hours, and not review $\frac{1}{2}$ the samples. Teachers' work load has increased dramatically with the time required to mark these epic papers. Many experienced Physics teachers have left Physics due to the current assessment regime.

Teachers' samples frequently appear to have had grades inflated to "Test the system." Some reports have been that teachers will get a "Please explain" from their administration if their sample is not dropped, as they have not tried hard enough to do the best for their kids. One sample I reviewed had a dramatically overinflated Sample A, top student. My assessment was that there was no evidence anywhere near the grade awarded, a very high "A" standard, possibly a high "B" student. Conversely, the bottom sample was submitted as a low D-, and I assessed it to be a very low "C" standard. It clearly appeared to be an attempt to increase the spread of the cohort and drop the mean, rewarding the top end. The panel chair did not want to dramatically drop the top student. This student exited with a level of achievement well above many other students in the state who had demonstrated their ability to a dramatically higher standard. Due to the lack of any serious auditing for what is our most serious assessment of students for tertiary entrance, none of this can be verified as all samples can be destroyed in term 2 the year after completion. Community Access courses at TAFE colleges are far more thoroughly audited.

Assume a school has 45 to 60 Physics or Chemistry students and 100 Maths B students. Samples from middle and cut-off of each award level are submitted. Teachers can choose a student near the required area who has what is in their opinion, a better folio than others on or near the same rung. Schools have a staff member who supervises QCS practice and senior assessment. Often there are clear 6th subjects for some students, so submitting their folio in place of another students' work, either in the correct folio sample or one below their achievement level is a good insurance policy. Students can be moved a couple of rungs to move them in order to enable particular folios to be sent, then swapped back after Verification. Out of the entire cohort, around 10-12 folios will be submitted. The bigger the cohort, the lesser the relevance of the sample. Panellists are given 2 hours to review a schools sample. With the size of the ERT's and EEI's, they may not get through anywhere near their allocation of sample A and ½ the rest of the folios, or they will have limited time on their full number of folios. Another big hole in accountability. The folios are submitted as "Sample A, Sample B, etc. The system is too easy to manipulate and while teachers on the whole attempt to place their students where they believe they should be, the panel process fails on every level of accountability.

Other state systems have 50% of the assessment externally and The International baccalaureate has 76% weighting on external examinations and 24% on submitted practical work. While there are significant problems with the moderation of this internal assessment in I.B. sciences, 24% is far easier to deal with than 100%.

No faith can be put into the assessment system when feedback from the QSA on the QCS test tells schools that they are marking too heavily and need to boost marks, and then panel tries to drop teachers' assessment on the same students.

The current assessment scheme has resulted in a gender bias towards girls as the criteria is over assessing communication skills and under assessing correct Physics! Students can contradict themselves, make major conceptual errors and still achieve an A standard. Comparability between schools and assessment tasks is not possible.

b) Student participation levels:

Students in lower year levels are aware of the work required to achieve high grades in Physics and Chemistry and are selecting other subjects to avoid the insane workload. The number of students who are leaving the subject during year 11 is concerning.

c) The ability of assessment processes to support valid and reliable judgments of student outcomes.

Panellists are paid less than tutors and the reasons for being on panel are to advance careers of young teachers and keep close with panel decisions to limit the damage to students in your own school. It is a type of community service. More evidence to this question is embedded in part A.

Yours Sincerely,

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