Education and Innovation Committee
Parliament House
Brisbane QLD 4000
eic@parliament.qld.gov.au

Submission to the Parliamentary Inquiry into Assessment Methods for Senior Maths, Chemistry and Physics

[redacted] Teacher.

My Background:
I have been a teacher within the Catholic and State sector since 1997. During this time I have taught Senior Chemistry and Senior Biology. I am an active panel member on the local district Biology Panel and have been a HOD at a Catholic School for the last 7 years.

Note: The views expressed in this document are my own and do not represent a school stance.

I have grave concerns about the assessment methods used in Senior Science in Queensland schools. I would also like to extend my concerns with respect to Senior Biology as well simply because the assessment tasks are the same and I am not sure why Biology was not included in this inquiry. While the general objectives are slightly different, the manner of awarding exit levels of achievement is the same (i.e. using a criteria based system) as well as the overall senior assessment system.

With respect to the current system of assessment that the QSA have applied and their approach to assessment in Senior Science my concerns include aspects such as: demands on students; demands on teachers; lack of consistency across schools; prescribed word lengths; plagiarism and verifying student ownership; variations between expectations of students from school to university and most importantly the impact to students with true scientific minds.

The complex aspect of EEI's and ERT's within the Science curriculum is damaging to both teacher and student work life balance. Currently I spend approximately 2 hours per student just to mark an EEI. If this were a class of 20 students then this equates to more than 40 hours outside of normal class teaching. Add to this two or more classes that are doing these types of tasks then a teacher is looking at upwards of 80+ just for marking the final task. Not to mention that prior to the student submitting the work the teacher has

marked drafts of various sections, provided feedback in either written or oral form, planned the experiment. Add to this the cross marking & moderation with other teachers. As a result my home life is suffering. My husband has had enough of "school work" affecting his weekend as well due to having to mind the children while I go off to the study to mark a couple more assignments. I cannot remember the last Friday night, Saturday night or even Sunday night that I had off without having to look at drafts or mark EEI's. When I take my children to their extra-curricular activities, I spend the time locked in my car while I find a spare moment to mark science work. Other parents who are not teachers are able to sit and socialise, have a coffee, chit chat and enjoy the time with their children. These tasks are affecting my home life, my relationship with my husband and my ability to spend time with my children outside of school hours. I constantly find myself sitting up past 11.30 at night to work on school work. This time is largely devoted to these tasks whether it be marking or draft checking. I rarely find myself spending quality time doing planning for the lesson. As a result I feel that I deliver substandard lessons due to the fact that I have had insufficient time to actually plan prior to the lesson.

There is the issue of who actually does the assignments. Any task that requires the students to do heavy research potentially brings with it the risk of plagiarism. Students have become very good at sitting on their computers and researching, googling and cutting and pasting. Plagiarism has also become a large issue. Most schools do not have the resources or money to purchase expensive online checking systems such as "Turn it in", or "Safe Assignment". Recently one student's ERT took me 5 hours to go through each paragraph just to determine which aspects were actually her own work and not just copied directly from the internet. This is after I had detected that it was not her own work. Then I still had to mark the work that was remaining.

In a ten week term of teaching a teacher may need to devote more than 6 weeks to undertaking the EEI. This could be broken up as:

- 1 week for planning, conferencing ordering equipment
- 1 week for researching the task and writing the introduction
- 1 week for writing methodologies, drawing up data tables and further in class conferencing to ensure that groups/individual students experiments are going to at least work
- 2 weeks for undertaking the experiment
- 2 or so weeks for writing the results/graphs/discussion/conclusion/abstract/errors/anomalies and then further in class conferencing, draft checking.

An ERT that requires field work as well (as in the case of Biology) requires a similar time line. This leaves the classroom teacher with approximately 2 to 3 weeks across a term for general teaching. If on average a cohort in each senior level completes 1 ERT and 1 EEI then we have approximately 20 weeks left for teaching. Excluding any other school based activities or interruptions.

Word lengths prescribed by QSA are unachievable for students particularly those hoping to address an "A" standard. Consider that a student for IP & E&C in Chemistry to achieve an A has to "*systematically analyse primary and secondary data to identify relationships between patterns, trends, errors and anomalies, record and process data, refine investigation, formulate justified hypotheses …*". Therefore an A standard student for their discussion/conclusion/recommendations would be writing much more than " 1500 words". This does not include their Introduction to the report which would simply add to this word length that the teacher has to then mark.

These tasks can be upwards of 12 or more pages. Some student's work I read is generally around the 20 page mark. The shear reading volume of this when you have a class of 20 students equates to more than 400 words. This is not allowing time for constructive feedback, marking the criteria and then deriving at some overall mark of which consists of looking at the balance of ticks that have been placed on the criteria sheet.

I feel that there is lack of consistency between different schools as to how and what method they use for placing students on a R6. Some schools will continually place a general tick in the "A" standard, other schools will place a tick and award an "A-", or an "A+", but how is the difference between these three actually determined when only one descriptor is used for the whole "A" standard? While QSA suggests that the descriptor used on the exit criteria is representative of the mid, different teachers and different schools can interpret this in many different ways. Add to this the complicated factor of then converting this A, A- or A+ onto a 10 scale band on an R6. How does a school fairly and equitably award an A3, A2 or A1? How is this then compared to a school in another district? What method do they use? It all comes down to "touchy feely". I have seen some schools where a general "A" has been awarded on the students work and then on the R6 this equates to a A8, 9 or 10. And other schools award an "A" but this equates to an A4, 5 or 6.As a panellist it becomes very hard to then argue that this may not be the case as we are "not to look for deficiencies", but "look for evidence to agree with the schools

submission". If there is evidence of "A" standard work, then it can become very difficult to then say that the sample is not representative of an A8 or higher.

Prior to 2004 when the new Biology syllabus came out we used to say that Complex Reasoning Process (CRP) was killing the kids. Consider that for a C standard in CRP a student only had to achieve 1% in order to be a C overall for this criterion. Many tasks that we now set students have a much higher cognitive demand than what CRP did. I recall now a particular question that I used to use in CRP would now be a UB3 question in Senior Biology. However, if a child was potentially contributing 1% to the current tasks used in Chemistry and Biology then they would be achieving somewhere in the E standard as a comparison.

Furthermore, there still seems to be a large discrepancy between the expectations of assessment that students are expected to do entering into university. When do students at Uni actually produce a research document similar to an EEI? For most students this is not until 3rd or 4th year or perhaps Honours. Consider a 1st year student entering into Medicine, Speech, Physio, OT. Anatomy and Physiology would require a large portion of what they would be required to do would involve memorising, being able to rote learn, label, identify structures, etc. In 1st year Chemistry courses at Uni many students simply need to fill in experimental books with some calculations and limited short response questions. How does this align with what our students are doing in high school?

Lastly and most importantly, I believe that most true scientific minds are being turned off science as a result of these long essay style tasks. A true scientific mind does not think in long winded sentences or well-structured paragraphs. A large number of students who are really scientific either start science and drop out or are already turned off prior to even entering into senior simply because they have not been able to achieve on these EEI's and ERT's in junior science. Less numbers of Boys at the school that I teach at are entering into science as a result of the essay style nature of science.

Where has the "learning fundamental principles of Science" gone?

Sincerely,

[redacted]