

## **Education and Innovation Committee**

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**From:** Amitha Hewavitharana [REDACTED]  
**Sent:** Friday, 10 May 2013 6:59 PM  
**To:** Education and Innovation Committee  
**Cc:** [REDACTED]  
**Subject:** Submission for the inquiry on the assessment of senior maths, chemistry and physics in Queensland schools

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**Categories:** Green Category

Dear Members of the Inquiry,

I am writing as an academic who has had teaching involvement at all 3 major universities (UQ, QUT and Griffith Uni) in Queensland. I am also writing as a parent of a child who has gone through the current Queensland senior education system, as well as the senior external examinations system offered by a couple of schools in Brisbane, like Hubbards school.

I agree with most of the concerns raised by other academics as well as parents in these responses regarding the current senior education system (not only science, but every subject).

As an academic, when I was new to Queensland, I found that there was very little correlation between the OP of the student who entered the university and his/her basic knowledge and the ability to problem solve. As an academic in Chemistry, I found this was especially pronounced in areas such as analytical chemistry, which requires a sound knowledge of mathematics. This was before my own daughter started high school. The so called good students are the ones who master how to fit their work into "assessment criteria" rather than those who learn the subject. To make matters more complicated, the interpretation of assessment criteria varies from teacher to teacher. This leaves room for the teacher's general impression of a student to affect the student's grade for that subject - clearly making grading a very subjective process.

I want to make my point through a real example: We moved to Queensland when my daughter was almost 6 so her education was entirely on this current system. She was tested to be in the highest percentage of the gifted category by the SOI system. She was a star student in primary school, especially in subjects like mathematics, science and English. She was a straight A student in her last year of primary school. She continued to stay in the same private school with a scholarship earned from that school. However, everything turned upside down when she started high school. This was the same for other children we knew, who were achieving similarly to her. That was when we started to investigate the current system. The more we learnt about the system, the more we regretted leaving NSW to come here. We changed her school to one of the best private schools in Brisbane at year 10, but the problems continued. She started believing that she was not a competent student and I had to remind her how well she did in primary, and that her grades did not reflect her abilities. When tested at home for science and mathematics subjects (by parents with chemistry and astrophysics postgraduate qualifications) it was clear to us that she knew the subject matter very well. However, her grades never reflected this understanding. A good example to demonstrate the main problem in the current system is that she consistently scored very high on problem solving criteria, but scored very poorly on knowledge & procedure, and communication & justification criteria. The workload was extremely high and the assessment required enormous amounts of work (not necessarily enhancing understanding of the subject). Later, to my disgust, I found out that parents or paid tutors often completed these complex assessments, rather than the students themselves. My daughter continued to believe that she was not a good student anymore and we feared her giving up altogether. Her gifted score on SOI or her parents' postgraduate qualifications in science were not helping her achieve higher, and we had to make a change.

Fortunately, at that time we found out about Hubbards school and its non-mainstream system. We enrolled her for year 12. She had to start two new subjects because they didn't offer physics or maths C that year at Hubbards. In spite of the fact that she was doing the full two year curriculum (year 11 & 12) in one year, her work load was less than before. She was happier, started believing in herself and did extremely well on her final exams, which allowed her to enroll very easily into her first preference at UQ. Having completely objective and transparent exams as the only method of assessment means understanding of subject content is the only thing that is being assessed. It also means that students work towards retaining information and skills for the long term, rather than the style of learning that comes with constant assignments and assessment items like EEI's.

I believe that this example clearly shows what a difference the system makes to students' and parents' lives. Despite the complications in current system the students are not getting sufficient knowledge of the subject and as a consequence continue to endure hardship at the university.

Sincerely,

Dr. Amitha Hewavitharana

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