SMC&PA Submission 244
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Submission to the Education and Innovation Committee Inquiry into

Assessment Methods for Senior Chemistry, Maths and Physics.

Having the experience of being a teacher for 20 years and Science HOD for 15yrs applying the National Profiles, Queensland Outcomes and Essential Learnings in the Junior part of the school as well as various versions of Senior Syllabus documents for Science Subjects, I am highly supportive of QSA's constructivist based, contextually inspired pedagogy, as well as the criteria based curriculum documents that reinforce the benefits of school based assessment.

I do not support external examinations in any of the senior subjects as I believe that the QCS is an effective tool to ensure a level playing field. Teachers, in my opinion, are best placed to know and understand what a student in their own class can and cannot do. I also believe that teachers are professional enough to be able to create assessment items that are tailored to their clientele in order to ensure that discernment between a solid A and a high A is possible. As I do believe that in low literacy, that subject specific subject knowledge, skills and conceptual understandings will prevail over basic literacy within the assessment task.

I truly believe that EEI and ERT tasks provide students with the opportunity to use their preferred learning styles to demonstrate their ability within a specific subject. Multiple choice and short answer questions have their place in all subjects, but I do not believe they lend themselves to students demonstrating the depth of conceptual understanding that can be expressed in a research task. I pride myself in being able to teach my students to think, to problem solve and to be able to show their understanding of concepts, including links between concepts in their explanations and justifications. These are not possible in multiple choice and short answer tests. Although I do agree that time is a limiting factor in Years 11 and 12, I do believe that one EEI per year is achievable and that it provides students with a contextual anchor to what may be a highly conceptual and difficult to imagine/understand world of Science or Mathematics. (I have many instances of anecdotal evidence from students and parents of students to show that the 'hands-on' approach of the EEI has helped their conceptual understanding and led to better levels of achievement.)

Criteria based assessment has been used in the non-science areas effectively for decades and it does have great advantages over a number system: it denotes explicitly in words what the student was able to demonstrate, and hence, conversely by reading the descriptor above the student's level of achievement, it is simple to work out what the student did not demonstrate and hence why they did not achieve at a higher level. As simple percentage does not show a student what they were successful at or not, nor does it show the student how they could have improved on it. Yes, criteria based assessment is more difficult to design and it does take longer to mark, but in the end it can be used as a learning tool itself and not just an assessment tool. An appropriate EEI or ERT will cater for high achieving students as well as those who do not wish to go on to tertiary study in Maths and Science.

I do not disagree that criteria based assessment takes a lot more time and that teachers should be given more time to write assessment and more time to mark, but I do not agree that external standardised assessment is better than moderated school based assessment. Having worked on the North American Continent as well, I have seen first hand the deficiencies of standardised testing. It is a quicker method for processing large numbers of students (bureaucracy) , but it isn't based on their learning or their success in learning (ineffective pedagogy).

Personally, as a veteran panel member in Chemistry , I do realise that some schools find it difficult to design quality pieces of assessment with appropriate criteria to give students the opportunity to demonstrate their learning at 'all' levels (the target levels commensurate with the students' demonstrated ability). This is due to the brief and encompassing language used within the syllabus documents: it lends itself to varying interpretations by individuals at the coal face, the teachers. I believe this can be alleviated with appropriate professional development to existing teachers and appropriate lecture and tutorial materials to pre-service teachers at university. I have experienced pre-service teachers in their final practicum phase who had not been directly exposed to syllabus documents. More explicit syllabus documents from QSA with appropriate elaborations, examples and samples would also assist in alleviating this problem. Investing in the moderation process would also alleviate some of the problems sometimes encountered using this system.

Having worked in both an external standardised assessment system and a school based assessment system, educationally, the school based system reflects constructivism and an effective learning pedagogy that an external standardised assessment system cannot. Yes it does require a lot more work from our teachers and yes it does infer that our teachers are professionals that are capable of interpreting syllabus documents and applying them to their environment in order to produce a work program suited to their own students whilst applying the agreed QSA standards to assess their students. I believe we can improve our moderation system by investing a little more into it and trusting our teachers to be the professionals that they are by giving them the time and the appropriate remuneration to carry out their tasks professionally.

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