

Chief Executive
New Zealand Qualifications Authority
PO Box 160
WELLINGTON

29 October 2006

Dear Dr Karen Poutasi

Submission regarding National Certificate of Educational Achievement

Level 1 Science 90188 Standard relating to Biology: Microbiology/Genetics

The New Zealand Microbiology Society (NZMS) has been concerned for some time about the assessments in firstly the school certificate science examination and now the NCEA (National Certificate of Educational Achievement) science assessments relating to microbiology, namely achievement standard 90188.

After investigation, the microbiology questions of this standard have consistently contained major errors of fact and the misinformation is propagated within the secondary school system. This author has previously investigated the microbiological expertise in schools and has found that most biology/science teachers do not have the subject knowledge to detect these errors. They instead rely heavily on resource material that was written to support this standard and contained NZQA (New Zealand Qualification Authority) examination questions and model answers from previous examinations. A panel of microbiologists, including secondary teachers with microbiology qualifications, reviewed the answers in the resource material and found they were often completely erroneous and misleading due to contextual type questions. The main errors relate to virus replication, fungi reproduction and bacterial structures. The source of some of these erroneous answers actually comes from the assessment schedule from NZQA although the authors of the resource materials tended to add more information which was usually wrong.

I contacted NZQA regarding these errors and Ian McGregor said that science standards have a panel of 4 checkers and an "independent advisor". I asked if there was an opportunity for a member of the NZMS (professional body) to advise the examiner and he indicated that there was not.

I have since written a review of the errors to various publishers and will enclose a report to NZQA outlining the fundamental errors within the examinations. This society feels that it is imperative that a professional with subject expertise is able to check the questions and answers for these external examinations and advise the panel/examiner on possible errors if the contextual format is continued. There is evidence that students were penalised and not awarded marks for giving correct answers to some questions (according to NZQA assessment schedules and examiners report) and that is intolerable to this society and other teachers of Level 1 NCEA Science.

The NZMS holds its next conference at Waikato University, Hamilton on the 21st – 24th November 2006 and the research relating to this topic is a subject for presentation at the conference and for discussion at the Annual General Meeting. As such, I would like to be able to table a response from NZQA to this letter.

I look forward to your response.

Christine Dunnington Fenton M.Sc., MRSNZ
Convenor NZMS Education Special Interest Group

Acting Head of Department – Nursing and Health Studies
Western Institute of Technology at Taranaki
20 Bell Street
Private Bag 2030
New Plymouth
www.witt.ac.nz
C.Fenton@witt.ac.nz
Telephone: 06 7573100 extn 8863

Copy to: Mike Willing
Deputy Chief Executive of Quality Assurance