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Draft Curriculum Feedback  
Ministry of Education  
PO Box 1666  
Thorndon  
Wellington.

November 23, 2006.

To the 'Draft Curriculum Feedback Team',

Please find below my feedback on the 2006 draft curriculum document. I offer this feedback as a pre-service teacher educator (mathematics education) at Waikato University (please note that I offer this feedback as an individual). I have not used the feedback questionnaire provided with the draft curriculum as I wished to provide more specific feedback.

**Supporting letter from the Minister of Education:**

- If this curriculum is part of the government's goal to transform New Zealand into a "knowledge-based economy and society" I would like this to be defined (and debated) – ie. what does this actually mean?
- Whilst I applaud the idea of giving "teachers more opportunities to apply their professional knowledge", I believe that teachers may also require support to make sense of and implement a new curriculum document. A specific example: the achievement objectives for levels 1-4 in mathematics and statistics are broad – will teachers require support to understand and implement them; and how, who and when will such support be offered?
- In the third paragraph of this letter there is no mention in the list provided in taking pride in who we are, through our 'scientific and technological pursuits'.

**Vision (page 8, draft curriculum document):**

- There appears to be an individualistic flavour to this page, with an emphasis on economic growth. I would prefer there to be at least a concurrent emphasis on caring for others and the environment. An economy/business 'theme' also appears to underpin parts of the vision. Have notions of service, spirituality and emotional intelligence been considered as important aspects of an overall vision?
- Under the "connected" list I think we 'relate *with* others' rather than 'relate *to* others'.

### Principles and values (pages 9-10, draft curriculum document):

- I do not understand the basis of having two such sections, ie. principles and values. They are both defined as beliefs and thus I wonder why they are divided? Could they be merged?
- “The values outlined in this curriculum are those that the New Zealand community supports...”. Is this statement supported by research?
- “community and participation for the common good” – how is this determined/defined?
- Whilst I believe that learning about our own values and those of others is important, is this:
  - The role of schools and teachers?
  - Have teachers had an opportunity to debate this decision? Whose agenda lies behind this? Are teachers being given the (impossible) task of ‘fixing’ all of society’s ills?
  - If we are to support students to learn about values, will teachers be given support and an opportunity to discuss how this might be done – for example, concurrently with the teaching of mathematics?

### Key competencies:

- Managing self – 2<sup>nd</sup> sentence – would it be better for it to read “It is about students *exploring (or developing)* who they are....”. I think these concepts develop throughout life, and expecting students to already know this is not reasonable.
- Participating and contributing – could the second sentence read “drawn together for purposes such as learning, work *and* recreation”?
- Thinking – is the use of the word ‘metacognitive’ helpful for most readers; or an example of educational jargon?
- Using language, symbols, and texts – Are the statements about the language of mathematics consistent with the definitions of mathematics and statistics on page 19? For example, on page 12 the study/language of *mathematics* appears to include relationships found in data, and yet this is explicitly described as *statistics* on page 19.
- Using language, symbols, and texts – “They use ICT confidently to overcome barriers....”. Why is there an emphasis on ‘overcoming barriers’ – could it read “They use ICT confidently to communicate, access new....”?

### **Mathematics and Statistics:**

- In the third paragraph it is stated, “They learn to structure and to organise, to carry out procedures flexibly...”. ‘Carrying out procedures’ to me sounds narrow (and possibly indicates what some children do, ie. they carry out procedures rather than developing a conceptual understanding) – could this phrasing be omitted and/or alternative words such as ‘investigate’ be used?
- Is asking questions still a part of being a mathematician? Can this be included somewhere?
- I would prefer there to be more emphasis on mathematical processes. Whilst many of the ideas from the mathematical processes strand, and an inquiry-type approach is advocated within the introductory statement, the processes are not explicit; and I wonder if some teachers will not have the experience to identify how mathematics can be taught in such a way that students have an opportunity to think creatively, critically, strategically and so on.

### **Mathematics and Statistics Achievement Objectives:**

- Could the opening statement, “In a range of meaningful contexts...” include words such as *problem-solving* or *investigating* rather than ‘doing’?
- It is good to see that number and algebra; and geometry and measurement have been merged.
- Throughout levels 1-4 terms from the Numeracy Project are included. Whilst I support the ‘merging’ of curriculum levels with the Numeracy Project stages, will teachers who have not yet taught with the Numeracy Project find these terms confusing? Will a glossary be included, or reference as to what these terms mean?
- I do not find the ‘equations and expressions’ and ‘pattern and relationships’ achievement objectives easy to understand. In particular:
  - Is the level one achievement objective too narrow?
  - Is graphing no longer introduced at level two?
  - Will teachers who are not specialists in mathematics understand these statements?
  - At level three, what does ‘spatial strategies’ mean?
- Will the use of the phrase “Statistical investigation (thinking)” be confusing? I think it means ‘statistical thinking’, but could it be interpreted that it is ‘this’ part of mathematics and statistics that relates to the key competency, ‘thinking’?
- At level three and four, are children still posing the statistical questions they are investigating?

During semester B of this year a group of my pre-service graduate students (ie. those students already with a degree, and completing one year of pre-service teacher education) also looked at the draft curriculum document. I have collated and summarised their comments and questions below:

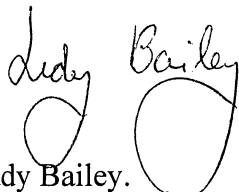
- The 1992 mathematics curriculum document will still be needed to try and make sense of, and provide direction for the new, broad achievement objectives, ie. some students felt the new curriculum achievement objectives were too broad. Other students liked this, believing that this gave the teacher more room for their own creativity.
- In light of the recent data that reveals that many year 8 children are not reaching the 'advanced multiplicative' stage (from the Numeracy Project), what changes and/or curriculum support is needed to change this?
- It was good to have all achievement objectives for each level in the same place, rather than separated into subjects.
- Support and resources will be needed to interpret the achievement objectives.
- The processes are too vague, and not specific enough for teachers to know how to implement them.
- The new curriculum is seen to promote cross-curricular teaching – this was perceived to be a positive thing.
- The new groupings of 'number and algebra' and 'geometry and measurement' are relevant and appropriate.
- Is there a conflict between the process and inquiry based 'flavour' embedded in the mathematics and statistics introduction; and the structured, behaviourist 'flavour' of the achievement objectives?

With respect to additional issues raised in the official feedback questionnaire:

- I found the document easy to read and the layout easy to access.
- As already indicated I believe that support, including resources, will be needed for implementing some aspects of the new curriculum.

I thank you for the opportunity for providing feedback.

Yours sincerely,

  
Judy Bailey.

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