

Some Questions Relating to Basic Arithmetic Operations in Primary Mathematics in Hong Kong

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1. In the CDC primary mathematics syllabus, it is stated that "The number of operations in each sum should not exceed two" (primary 3, 3.14, p.36). What are the reasons underpinning the above quotation?
2. I cannot find any sums containing more than two operations in a complete set of primary textbooks (The series by Modern Educational Research Society, Ltd., 1988 edition). Does the quotation in (1) set an upper limit to the experience of our primary students? Will they have any chance of doing sums containing more than two operations, for example, in supplementary exercises?
3. Is it justifiable to assume that average secondary-one students can perform $3 \times 4 \div 3 \times 2$?
4. What is the answer for the sum in (3)? Here are some data from my ongoing study: 80% of 40 Secondary 1 students and 10% of 39 Secondary 2 students from a school of average standard gave "8" for the above sum. In addition, most of the other answers were "2". Does this result suggest any problem?
5. A Secondary 1 student said that $a \times b \div a \times c = (a \times b) \div (a \times c)$ was correct because the sum could be done without the brackets and the brackets could make the calculation faster. But she did not know whether the answer would be changed because they were not numbers and could not be calculated (see note below). Comparing the student's response with the following note "Use of the distributive property of multiplication to simplify computation in certain cases" in the CDC syllabus (primary 5, 5.4, p.52), have our students misinterpreted the message delivered in their course of learning?

Note: The student's responses in Cantonese

- 學生: 第一條佢 Er 可以加括弧又得唔加括弧又得, 可以即係可以簡單D囉, 即係如果你將 a 乘 b 再將 b 除以 a 咪即係好似無乘到。
- 訪者: 我唔明呀, 你講多次, 咩嘢加括弧又得唔加括弧又得, 即係乜嘢意思呀?
- 學生: 即係話 a 乘 b 除 a 乘 c 你加括弧, 你可以做快啲的囉。
- 訪者: 唔。
- 學生: 唔加括弧你就好似好"論盡"。
- 訪者: 點"論盡"法呀?
- 學生: a 乘 b 之後又要除翻 a 即係等翻於一個個數再嚟乘翻 c。
- 訪者: 唔。
- 學生: 咁比如你 a 乘 b 再除以 a 乘 c 咁加埋咪除好啲的囉。
- 訪者: 咁點樣好啲的呀?
- 學生: Em..快啲的囉覺得。
- 訪者: 但答案會唔會錯架?
- 學生: 唔...唔知呀。
- 訪者: 唔知架, 咁快啲的就得架拿? 你唔駛理佢啱唔啱架咩?
- 學生: 咁 Er 而家係 abcd 計唔到架嗎。
- 訪者: 哦。
- 學生: 1,2,3,4 咪如果係數目字, 計唔到咪計翻個括號囉有時間。