Report on the October 2014 Student Numeracy Survey

School’s Numeracy Committee

November 2, 2014
Rationale and Method

Following a meeting of the School Numeracy Committee 2\textsuperscript{nd} October 2014 it was decided to implement a number of strategies to support numeracy in targeted areas. These areas included:

- Time
- Measurement
- Percentages
- The role of numeracy across the school curriculum
- Integers
- Literacy and numeracy
- Student attitudes towards numeracy.

It was proposed at the meeting to survey students in these areas to establish a baseline. A sample of 158 students completed every question in the anonymous online survey in the schools computer room from the 10\textsuperscript{th} to the 20\textsuperscript{th} October 2014. Students were allowed use calculators. Students from 1\textsuperscript{st}, 2\textsuperscript{nd} and Transition year participated. Classes were selected by convenience of access to the computer room during the survey period. The sample was biased towards 1\textsuperscript{st} and 2\textsuperscript{nd} years but it does represent a fair sample of ability within each participating group.

- 83 1\textsuperscript{st} year students from 3 mixed ability classes.
- 50 2\textsuperscript{nd} year students form 1 higher level and 1 ordinary level class
- 25 Transition year students from 1 mixed ability class
Numeracy Survey Report

Reading Time and Calculating Time Difference.

Survey questions:

Every student with one exception could correctly read the time. A second year student misread the time on Clock B as “21 minutes past 10”. However most students could not work out the difference between the two clocks. The answers varied from 0:43 to 3:09. Only 21% of students correctly answered 1:49 or 1:48. 53% of the students’ answers were out by more than 20 minutes.

Calculating time difference

Correct 21%

Incorrect 79%
Measurement

Survey question:

When asked their “height in metres or centimetres” the student responses ranged from “4.8 cm” to “5 meters 7 centimeters”. 111 students gave plausible answers to this question.

Do students know their heights in metres?

- No 30%
- Maybe 70%

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Percentages

Survey question:

A student got 43 out of 60 on a test. Correct to the nearest whole number what was her percentage mark?

This question is covered in the Primary School Maths Curriculum. Most students could not write 43/60 as a percentage correct to the nearest whole number. The responses ranged from 20% to 93%.

Writing a fraction as a percentage

Correct
39%

Incorrect
61%
The Role of Numeracy Across the Curriculum

Survey questions:

Students displayed a reasonable appreciation that numeracy was important across many curricula.

Numeracy knowledge and skills are important for...

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<tr>
<th>Subject</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
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<td>38</td>
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<td>Geography</td>
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<td>38</td>
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Working with Integers

Survey question:

First year students would have recently completed the chapter on Integers in maths class. Most students managed this subtraction but it is significant that a quarter of students could not subtract 6 from negative 9, particularly considering that students had access to calculators. 24 out of 25 Transition year students correctly answered this question.

Students answers to "What is -9 - 6?"

- Incorrect 24%
- Correct 76%
Literacy and Numeracy

Survey questions:

The word “obtuse angle” was familiar to students. Considering that using guesswork 20% of students should get the word “exponent” correct that only 29% of students chose the correct meaning of “exponent” is small. It was hoped that this might be the case to be able to comment on the effectiveness of maths word of the week on students’ mathematical literacy.

Correct 78%
Incorrect 22%

Correct 29%
Incorrect 71%
Student Attitudes Towards Numeracy

Survey questions:

88% of students appreciated that numeracy skills are important for life. Even though only 22% of the students considered themselves to be good at maths it is encouraging that 62% thought that they had the potential to be good at maths.