

To: Peel District School Board, Instructional Programs/Curriculum Committee

From: Stan Taylor     September 19, 2012

Re: Evaluation of Full Year and Semestered Mathematics - February 15, 2012

I wish to present my review of the report presented February 15, 2012 for consideration by this committee.

It is clear that I am disappointed in the design and conclusions of the draft final report, Evaluation of Full Year and Semestered Mathematics. As the report appears now, there is no question that Secondary Schools will not be encouraged to adopt the Full Year approach. The report is more an evaluation of historic data (i.e. 2004 to 2011) of Full Year and Semestered Math from a 'mixture' of schools rather than an evaluation of the program at Rick Hansen SS (Pairing of Math & Phys. Ed.) and Fletcher's Meadow SS. The report digs up data from years ago instead of reviewing and assessing a live experiment that is un-folding before our eyes at Rick Hansen SS.

The focus of the report is much too weighted on EQAO results even though Full Year Math was never promoted as a means to improving Grade 9 EQAO test results. The goal has always been to remove the 7 to 12 month gap between grades.

I am also disappointed that there was no mention of the Phys. Ed. component of the Rick Hansen SS program. In a verbal report to me, the head of the Phys. Ed. Dept. spoke very positively about the Full Year Phys. Ed. One benefit is that more female students had enrolled in Grade 10 Phys. Ed. (approximately 50% as compared to 25% formerly).

I wish to offer some comments on the findings of the report.

#### Findings from the literature

As mentioned these findings are mixed. I have not specifically reviewed the papers cited in the literature review, however I have conducted on-line searches in which I have come across some papers which praise the semester system but are in fact evaluating the A/B Block Semester system vs. traditional 8 x 40 minutes classes. The A/B Block system is far removed from the Full Block (4+4) semester system employed in most PDSB schools. The pairing of Math and Phys. Ed. on alternate days is a mini A/B Block System. I ask that you confirm that the distinction between A/B Block and Full Block was maintained throughout the report.

#### Findings from the EQAO data

I question the lack of statistical analysis applied to all data comparisons included in the report. The report says, 'There does not seem to be a meaningful achievement advantage for either form of scheduling, as their results are very similar'. This statement had a footnote as to why statistical analyses are not needed. Then, selected 'Percentage Stats' on gains or losses of this group over the other are included (See Page 9). I don't believe it is proper to pull numbers out and make inferences or conclusions such as have been done in this section. I suspect that there may not be a 'Significant Statistical' difference between the results of the two systems which therefore would be positive for Full Year Math since this would demonstrate that there is no detriment to adopting it. Please consider revising this section to make it clearer.

### Findings from report card grades

Again the report says, 'As shown in Figure 5, there were no noticeable differences in pass rates between students taking the course in one semester and those taking over the full year.' However, I find it interesting that the authors chose to not highlight any selected 'Percentage Stats' in this section, when Full Year Math was slightly ahead (92% vs. 89% for Academic Pass Rates). This is unequal treatment of data. Then there is the added statement, 'Taken together...literature review, EQAO data, and report card data suggest that full year math in Grade 9 offers little academic benefit for students in academic classes.' I cannot agree with that statement or accept it as an unbiased assessment. The literature review is mixed at best; the EQAO results and Pass Rates are most likely not significantly different, therefore the only conclusion that can be made is, there is no significant difference between the two systems as far as Grade 9 is concerned. So far the report does not help us with the initial question regarding the gap between Grade 9 and 10 (and beyond).

My understanding is that the program at Rick Hansen S.S. started in the Fall of 2010. Therefore, the Grade 10 class in the Fall of 2011 is the first to transition from Math/Phys. Ed. every other day to the standard semester format. Furthermore, the current Grade 10 class of Winter 2012 is the first to transition to the semester format after a 7 month gap in math instruction. Is this correct?

It appears to me that assessing these two classes both qualitatively and quantitatively as to their grades and opinions on the pros and cons of the full year vs. the semester approach should be very informative. How did the Fall 2011 Grade 10 class, which completed final exams in January 2012, fare compared to other Grade 10 cohorts from past years, at the same school and the PDSB? How well prepared did these students feel they were for Grade 10 math? What are their comments on the difference in pace of instruction?

Interviews with current Grade 10 Students and Instructors regarding the re-starting of Math after a 7 month gap, I believe would be helpful.

In *Section 3.3 Support for Full Year Mathematics*, there are several comments that seem inappropriate for inclusion.

**Administrators:** '... pointed out that making the switch to full year math, in isolation, is unlikely to result in meaningful improvement'. Who can argue with that? Who is proposing that this is to be done in isolation? On the other hand who is evaluating the negative effects of 7 and 12 month gaps in math instruction?

**Teachers:** '... are concerned that the students are not being adequately prepared to manage the increased pace and expectations of Grade 10'. Really?...this conclusion before the results from Rick Hansen SS students who are now in Grade 10 are known. Also, is it not the case that the same can be said for Grade 8 students (Full Year) being prepared for Grade 9 (Semestered)?

**Students:** 'Trouble recalling information learned early in the academic year when taking the EQAO test in June'. Well this appears to be the classic case of Short-term recall vs. Long-term understanding. Also, it is a pity to hear that Grade 9 students are stressing about EQAO test results when these results should only be viewed as a tool for staff, administration and your office to evaluate program and delivery methods and not individual student achievement. A sad perversion of a good idea.

Other comments:

'Being a quick learner.....class is too slow'; Students 'slacked off';'...prone to procrastinate' . Really? Teachers were so unable to keep students engaged? Are there initiatives such as a Math Club and student mentoring/leadership programs to engage the quick learners and provide a means of providing help to less gifted students?

Page 15, states 'Almost all of the students interviewed indicated that they prefer taking mathematics in a semestered format rather than over the course of a full academic year'. How was this question asked? Did these comments come from Grade 10 students at Rick Hansen SS? How many students were asked? What is the distribution of their responses? Were the students selected randomly?

I personally find it hard to believe that the net result of the reduced pace of the Full Year Math was students finding it too boring and relaxed, leading to little to no improvement in final grade achievement; and researchers found significant numbers of students that felt that they would have done better in math if the pace was doubled! *"Hey man, I would've got A+ but I had too much time to do my homework and get help... it was so de-motivating"*.

After this report, if you're looking for disillusioned and de-motivated, look no further than me.

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