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Recent Changes to the Manitoba K-8 Mathematics Curriculum: Minor, Unnecessary, and Missing the Point

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The recent changes to the Manitoba K-8 Mathematics Curriculum are minor in scope, were unnecessary, and are missing the point of mathematics curriculum reform. I will argue for each of the three.

First, the claim that “basic arithmetic [is] back in class” (Martin, 2013) is completely misleading because it wrongly suggests that basic arithmetic was not in the previous version of the curriculum. It also suggests that there is a fundamental shift in the orientation of the arithmetic objectives in the curriculum. That is not the case at all. There are basically two types of changes made to the curriculum. The first change is the explicit mentioning of the standard algorithms for the four basic number operations as means of solving problems and understanding the operations. However, students are also expected to use other means, like personal strategies and estimation. As I know from my own work with Manitoba teachers, good classroom teachers have always helped their students develop multiple ways of solving those types of problems – and the previous version of the curriculum made room for exactly that approach. Furthermore, the revised curriculum continues to insist that students *understand* what they are doing when using any of the strategies to solve problems. The second change concerns the explicit mentioning of recall of number facts in the early grades. The same as above applies here as well: There continues to be many more ways students are expected to arrive at number facts, and good classroom teachers have always helped their students develop arithmetic fluency. The changes to the curriculum are, indeed, minor and blown out of proportion in light of the fundamental ideas of good mathematics education that are still the basis of the curriculum.

Why was the curriculum revised in the first place? Why was the revision process limited to the arithmetic portion? The review was outside of the usual curriculum revision cycle and did, thus, require additional resources from the ministry. The revision process for the K-8 Mathematics Curriculum coincided with two events: the second-last placement of Manitoba students in the 2010 Pan-Canadian Assessment Program (PCAP), and the creation of a lobby group lead by two Manitoba mathematics professors, who wanted to see changes to the arithmetic section of the curriculum. While the ranking of Manitoba students in the PCAP can give rise to questions, it can hardly justify a curriculum revision, considering that, for instance, Alberta, which placed third best on the mathematics portion of the PCAP, has a mathematics curriculum identical to the 2008 curriculum. Furthermore, while I cannot speak for specific individuals, I can say with some certainty that as collectives neither mathematics education professors (not to be confused with mathematics professors), nor the Manitoba Association of Mathematics Teachers, nor the mathematics educators working in the ministry saw a real need for the curriculum change process set up by the ministry. The curriculum revision was

unnecessary, while supporting classroom teachers in their teaching of mathematics continues to be the best way to improve student learning in mathematics.

The curriculum revision was not only unnecessary to improve student learning of mathematics, it also missed the point of a needed school mathematics curriculum reform. In a separate essay I will outline and argue for what that point should and can be. The following comments should suffice here. The students affected by the curriculum changes will graduate from high school in eight to twelve years. At that time paper and pencil calculations will be as obsolete as writing with a pen will be and partially already is at this time. The expansion of technology use and availability in our day-to-day living will include in the near future, for instance, the extensive use of sophisticated voice recognition programs that will have us dictate any arithmetic problems at the time they occur and provide us with an answer faster than we will be able to find a pencil and a piece of paper. In eight to twelve years there will be no practical use to learn an effective standardized paper and pencil algorithm for the four basic whole number operations, as there is nowadays no practical use anymore for Newton's algorithm of finding square roots to any desired accuracy. On the other hand, however, the ministry's vision for public education is for it to prepare students "for lifelong learning and citizenship in a democratic, socially just and sustainable society" (<http://www.edu.gov.mb.ca/edu/mandate.html>). Mathematics education can contribute more to this vision than it currently seems to do through curriculum and practice. Would this not be a worthy point of a mathematics curriculum revision?

References

Martin, N. (2013, June 18). Basic arithmetic back in class. *Winnipeg Free Press*, p. A3.