



National Post  
All\_but\_Toronto  
Letters, Wednesday,  
18 September 2013, p. A11

## Let's get back to teaching the basics

**Michael Corinthios**

National Post

*Montreal - Re: Math That Adds Up, Sept. 14. At last, math professors are fighting to restore sanity to the way grade-school children are taught mathematics. They cite the damage that the Western and Northern Canadian Protocol (WNCP) caused, and want to restore a back-to-basics approach. The WNCP replaced the teaching of elementary addition memorization, vertical addition, subtraction, carry, borrow, times table, with commerce type problem solving and doing research and innovation as a sign of Canadian sophistication. We ended up with people who can't do a simple subtraction; totally dependent on a calculator.*

*If you're asked to teach grade school kids to play chess and you decide to give them a research project to start with the game of checkers and invent a more sophisticated generalization, you would waste their time and yours rather than let them learn and enjoy the beauty of chess. If instead of teaching simple decimal addition you start by teaching genera-radix addition, hexadecimal base-16 addition, you would claim a degree of sophistication, but you would have discouraged the kid, the teacher and the parent who know not what was this all about, and kids would have been put off math forever.*

*In all of Canada, to all those who have ears, let them hear: Go back to teaching the basics. Respect tradition.*

Michael Corinthios

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National Post

All\_but\_Toronto

Canada, Saturday, 14 September 2013, p. A6

## Manitoba Math

### A back-to-basics curriculum makes a return to the classroom

**Moira MacDonald**

National Post

*University of Winnipeg math professor Anna Stokke and two of her colleagues knew there was "a huge problem," when they started hearing about manitoba grade school students not being taught how to do vertical addition, or carry or borrow numbers, and not knowing their times tables.*

*Then, two years ago, she and Robert Craigen, a fellow u of W professor, and Fernando Szechtman a math professor at the university of regina, formed WISE math - the Western Initiative for Strengthening Education in Math. They set up a website with a blog, gave lots of media interviews and started meeting with government officials to push for changes in the way math was being taught.*

"Then we started hearing from a lot of parents, from all across Canada," said Ms. Stokke, whose group has collected nearly 1,000 signatures supporting its calls for reform. "It's a lot of work and it's a lot of trouble to advocate for things like this ... but our kids are worth it, because in the end we really need our kids to learn math."

The group is seeing the fruit of its efforts this fall, as manitoba rolls out a "back to basics" revised curriculum for kindergarten to Grade 8, one explicitly requiring students to learn

times tables, have automatic recall of answers to basic problems such as  $30 - 5 = 25$  (known as math "facts"), and learn standard algorithms for key math operations - and perform them without using a calculator.

It marks a step back from "new math" and "inquirybased" teaching approaches that emphasize such things as estimating and multiple "strategies" in basic calculations - complicated methods of solving math problems in a bid to develop students' deeper understanding of how those calculations work. Such approaches are common across Canada and are part of the Western and Northern Canadian Protocol (WNCP), a common framework, initiated in 1995 and revised in 2006, used to develop curriculum in all Western provinces, Canada's three territories, as well as in Atlantic Provinces including Newfoundland, Nova Scotia and Prince Edward Island.

"It's not perfect, but it's definitely a step in the right direction," said Ms. Stokke, who thinks this makes manitoba the first province to "walk away from WNCP a bit."

While manitoba continues to be a part of WNCP, its education minister, Nancy Allan, credits Wise Math's

efforts for helping to drive the change.

"We were hearing concerns from parents and we were hearing concerns from some math professionals," said Ms. Allan, who called her province "a leader" in math reform. besides worrying about students not learning basic math skills, parents trying to pitch in with their children's homework, "were having difficulty helping their young people because they weren't able to understand it either."

Although standard algorithms "have been used in the past" by teachers, the revision explicitly states they must be taught, said Blaine Aston, viceprincipal and numeracy specialist at Brandon's Ecole New Era School.

"The clarity in what (teachers) are supposed to teach in each grade level in terms of math facts is a positive step," said Mr. Aston.

Winnipeg parent Laura Lamont says the changes are "a huge relief," especially after watching teachers get uncomfortable when asked why they couldn't teach students how to add numbers in vertical columns instead of horizontally.

"The kids are bright and the teachers are dedicated, but it felt like

everybody had their hands tied behind their backs," said the mother of twin nineyearold boys who took matters into her own hands last year when she enrolled them in Archimedes math Schools, a nonprofit afterschool math program developed by Ms. Stokke. The program itself dates back to the professor's efforts to give informal remedial math help to her own daughter and some of her friends.

But this is no wholesale dumping of new math teaching. Teaching students multiple strategies in problemsolving will still be part of the mix, but the government says it is now striking "the appropriate balance," between students' basic math skills, conceptual understanding and problemsolving ability. The province also plans to create a mathematics education advisory committee, update high school math courses and work with university faculties of education to improve teacher training in math.

"We're not going back to 'kill and drill,' that's not what we're trying to accomplish here," said Ms. Allan. "but there has to be a basic foundation in regards to adding, and subtracting, and memorizing math facts (and) knowing how to do math at an early age."

That leaves Sherry Mantyka skeptical. Although the math professor at Newfoundland's Memorial University said she would welcome a true back to basics approach in her own province's schools, an announcement touting just that in 2008 only led to Newfoundland's adoption of WNCP. As a result, she continues to work with hundreds of university students in remedial math programs every semester. The director of Memorial's mathematics Learning Centre

estimates about a 20% failure rate on the university's math placement test, required for every student wanting to take at least one math course.

"They do not know sums up to 20. They do not know multiplication products up to 100.... A question like nine into 83,209, they'll try to do with repeated subtractions," she said.

One problem, she said, is that students who resort to using the complicated "strategies" they've been taught in grade school, even for simple math sums, use up their working memory and are then helpless to solve more complicated calculations.

She called the changes in Manitoba "not a bad thing, but is it going to fix the problem? I doubt it." even calling it "back to basics" is "inaccurate," argued education professor Ralph Mason, who participated in development of the revisions. But that's a good thing, said the university of Manitoba specialist in math education.

"The whole idea of rolling these things back to a time when everyone learned these basic facts didn't exist," said Mr. Mason. Previous methods that have focused on memorization and rote performance are "strategies we know never worked," and left some students struggling.

But Ms. Stokke complains that "there's always this false dichotomy that gets set up where they say, 'We want kids to learn with understanding and you want skills.' Well, that's ridiculous. They should have both. you don't start neglecting one side of it in favour of the other."

Alberta has had a key hand in developing WNCP and uses it as a

framework for its own curriculum. Christine Henzel, director of mathematics, arts and communication for Alberta's education department, and who has worked on the development of WNCP in the past, said she could not speak to whether Manitoba's changes signify a rejection of any aspect of WNCP, but said it is expected that all provinces using it will adapt it to their local needs.

WNCP is based on research, she said, and is aimed at providing students with realworld math skills so that they understand how and when to apply the math facts they know.

"If we focus on memorization, we're not going to get there," she said.

Another question arises: If the WNCP is so bad, why is Alberta, which uses it, a Canadian leader when it comes to international testing? Ms. Stokke and her fellow U of W professor, Mr. Craigen, argue that, in fact, Alberta and other provinces such as British Columbia have seen their math achievement drop in outside assessments since WNCP.

"Every jurisdiction under WNCP has shown steadily decreasing assessment outcomes since the introduction of the WNCP curriculum," Mr. Craigen said.

Meanwhile, there are signs parents outside of Manitoba are also searching for more help with building their children's essential math skills, says Doretta Wilson, executive director for the Ontario based Society for Quality Education, an advocacy group pushing for more back to basics approaches. The province's student testing agency recently reported a five year decline in Grade 3 and 6 students' math skills and a growing number of students

seeing a drop in their achievement between Grade 3 and Grade 6. "I can tell you, through our own website, our math worksheets are our highest indemand resource," said Ms. Wilson. "And it doesn't look like the tutoring centres are going to go out of business any time soon in Ontario."

**Figure:**

John Woods For National Post

Winnipeg teacher Tracey Cervantes uses both new and "old math" techniques. Manitoba is switching to teaching math the way it used to be taught: Times tables are in, calculators are out.

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**PUBLI-C** news-20130914-NP-0049 - Date d'émission : 2013-09-24

*Ce certificat est émis à Polytechnique - Service des communications à des fins de visualisation personnelle et temporaire.*

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