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Why is Canada scoring low in mathematics?

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This project was designed to explore root causes of low achievement in mathematics and to suggest how to improve K-12 students' performance in mathematics classes.

We will also:

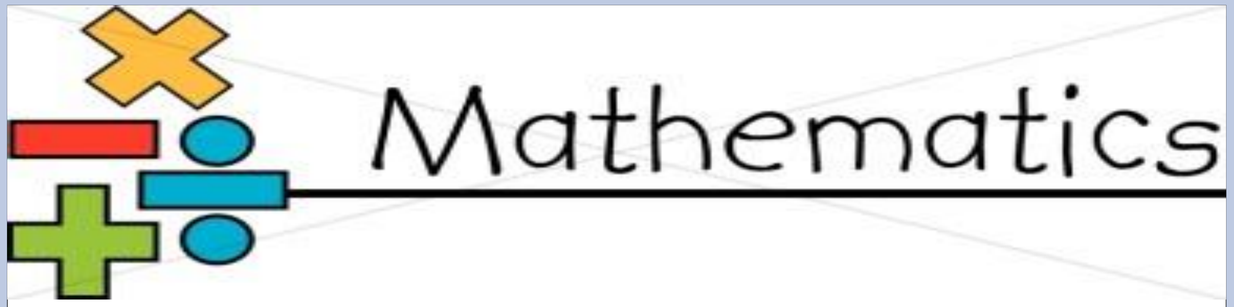
- ✓ identify success criteria in Mathematics of some selected countries, and
- ✓ propose how to implement those strategies in Canada.

Existing State of Knowledge

- ➢ According to the OECD, Canadian students spend on average 75 minutes in the math class, which is significantly more time than in countries that outperform us in mathematics.
- ➢ Students who do not have strong foundation in mathematics at elementary level generally struggle at secondary level.
- ➢ Over the years, there is a noted decline in math and science scores among our students.

Research Question

This research intended to identify factors that may have contributed to Canadian students performing worse on international math tests, compared to students in other countries, like Finland.



The Methodology

Information for this study was obtained from various existing resources such as articles from the well-known journals, magazines, and newspaper articles. After the information was gathered, the differences between the school systems were noted and ranked as most probable causes based on the relevancy of the resource.

Mean Score: students performance in mathematics PISA 2003 through 2012

	PISA 2003		PISA 2006		PISA 2009		PISA 2012	
Country	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.
Canada	532	(1.8)	527	(2.0)	527	(1.6)	518	(1.8)
Finland	544	(1.9)	548	(2.3)	541	(2.2)	519	(1.9)

Findings

- ✓ Canada and Finland offer a compulsory free education from kindergarten to high school, including transportation and free text books—the factors that could eliminate the financial stress of students and their families.
- ✓ The two countries differ in requirements for teacher qualification, where Finland requires higher qualification than Canada.

In Finland:

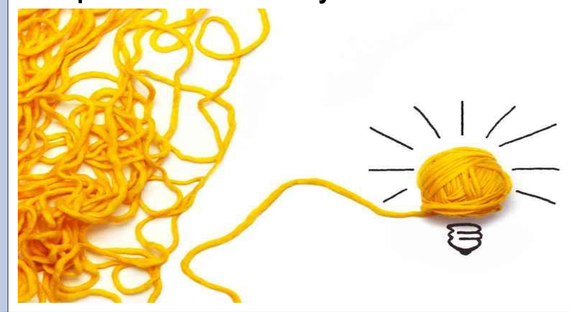
- ✓ Children do not start formal schooling until the age of 7
- ✓ Teachers are given more control over the curriculum
- ✓ Schools apply various non-traditional techniques to engage students, for example, no requirement for homework, no high stakes tests, no tardy bells, and a short school day.

In Canada:

- ✓ Children start school year at age 4
- ✓ Children do not stress around improving numeracy skills
- ✓ Teachers have less control over curriculum especially for mathematics
- ✓ Teachers need to obtain a B.Ed. degree from a university to qualify for teaching.

Recommendations

- ➢ Teachers' qualifications to teach mathematics should be up to the level of Master's degree.
- ➢ Canada should allow teachers to have more control over curriculum, especially for mathematics, since it is a difficult topic for many students.
- ➢ Canadian teachers need to emphasise importance of numeracy skills.



Conclusion

Canadian students need special support to build strong foundation in mathematics at elementary level to avoid struggle at secondary level.