

### *Social Context*

Manitoba has a population of approximately one million, 60% of whom reside in the capital city of Winnipeg. Manitoba must meet the educational needs of a wide range of ethnic and cultural groups. English-as-a-Second-Language (ESL) instruction is provided for immigrant students. There is a strong Franco-Manitoban community in the province with students enrolled in the Français program. The French Immersion program has become an option for about 9% of students. In addition, there is a notable representation in the public schools of the Aboriginal community in both urban and rural/remote regions of the province. Manitoba has a broad and diverse economic base.

### *Organization of the School System*

Manitoba's school system enrolls approximately 195,000 students in kindergarten to senior 4 (grade 12). It employs about 13,500 teachers in 46 school divisions and 8 districts. For program delivery purposes, schools are encouraged to group grades according to early years (kindergarten to grade 4), middle years (grades 5 to 8), and senior years (senior 1 to 4). Students may choose courses from four school programs — an English Program, Français Program, French Immersion Program, and a senior years Technology Education Program. The students selected to participate in the SAIP science assessment were either 13 or 16 years of age. Most 13-year-old students were in grade 8 or grade 9 (senior 1), and most 16-year-old students were in senior 3 or senior 4.

### *Science Teaching*

Manitoba is currently in a state of transition with science curriculum development and implementation. New kindergarten to senior 4 (grade 12) science curricula are being developed based on the *Common Framework of Science Learning Outcomes*. The new Manitoba science curricula are being designed with the goal of developing scientifically literate students. The curricula have general learning outcomes in the following areas:

- A. Nature of Science and Technology
- B. Science, Technology, Society, and Environment (STSE)
- C. Science and Technology Skills and Attitudes
- D. Essential Science Knowledge
- E. Unifying Concepts

Specific student learning outcomes are identified at each grade and linked to one or more of the general learning outcomes. New curricula emphasize the importance of teaching and learning science in real and relevant contexts and the acquisition of scientific and technological skills and attitudes. Science teachers are encouraged to use a wide variety of instructional strategies to address the needs of all students and to connect classroom teaching with the real world.

### *Science Testing*

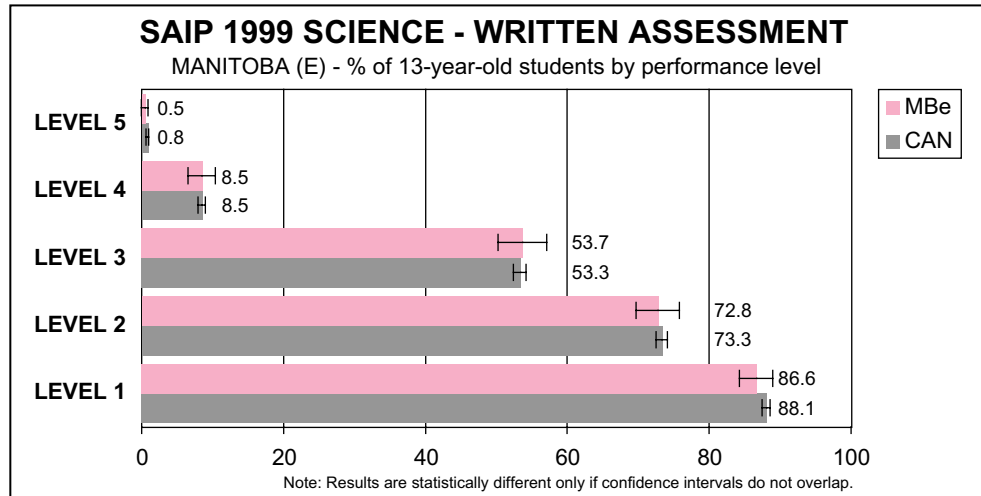
From 1979 to 1994, Manitoba Education and Training administered a provincial curriculum assessment program in major subject areas at early, middle and senior years. This program was suspended in November 1994 to enable the department to refocus its resources on a comprehensive standards testing program as part of the New Directions educational reform initiative.

For the SAIP Science Assessment, students were tested in the language of instruction.

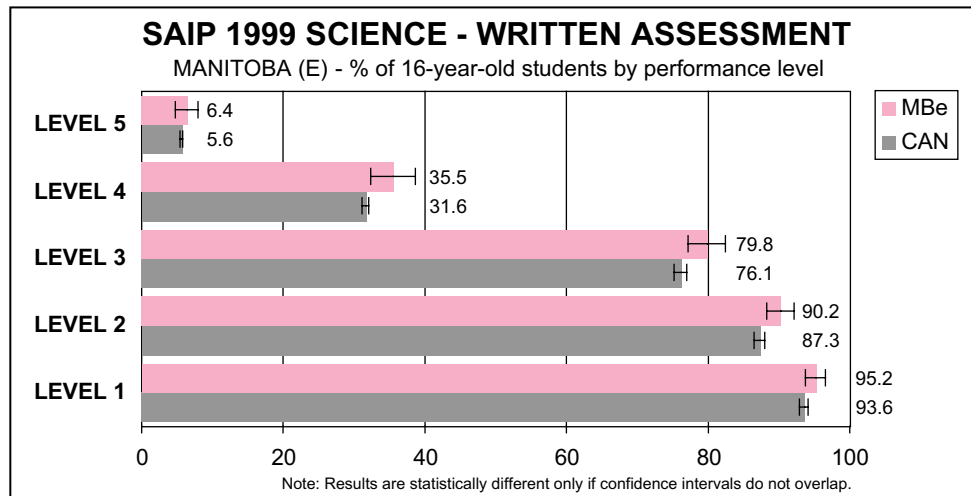
Manitoba 13-year-olds who responded in English performed as well as students at all levels in the Canadian sample. Manitoba 16-year-olds who responded in English performed at least as well as the Canadian students as a whole and better than the Canadian students at levels 2 and 3 in the assessment.

The performance of both 13-year-old and 16-year-old Manitoba students who wrote the assessment in English showed significant improvement between 1996 and 1999 at level 3.

**CHART 47**



**CHART 48**



## Manitoba (French)

There are significant differences in performance between 13-year-old Manitoba students who wrote the assessment in French and Canadian students as a whole. Manitoba 16-year-olds who responded in French performed as well as the Canadian students for levels 1, 2, and 3.

The performance of both 13-year-old and 16-year-old Manitoba students who wrote the assessment in French showed significant improvement between 1996 and 1999 at level 3.

CHART 49

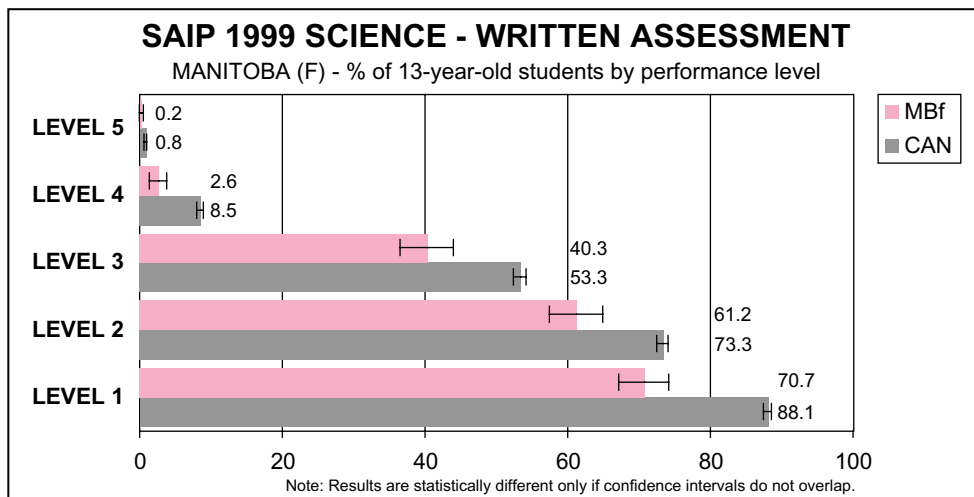


CHART 50

