

should focus on developing brain-power, not raw materials, by improving the quality of education and providing continuous training; that higher, national standards are needed to improve educational performance.

Canadians are looking for more and better partnerships between the business community and educational institutions, and for more effort to be put into developing learning skills useful throughout life, and into ensuring that workers are re-trainable.

So these are some of the dimensions of our learning challenge.

In science and technology, only 3 of every 100 Canadian companies do research. Nearly 30 per cent of private-sector research and development (R&D) spending is done by four companies. Canadian firms invest only half as much in R&D as their German, U.S. and Japanese competitors.

The rate of application of new technology to industrial processes in Canada is alarmingly low. According to a 1989 survey, fewer than half of Canadian manufacturers had implemented even 1 of the 22 leading manufacturing technologies, such as robotics and laser technologies -- keys to productivity growth in the 1990s.

There are bright spots. Canada's R&D spending runs ahead of OECD averages in high-tech sectors such as electronics, aerospace and computers. Private-sector R&D in Canada has grown by 6.5 per cent a year, in spite of the recession.

Companies investing in R&D get returns. Inverpower Controls Ltd., a Burlington company making power electronics equipment, invests 30 per cent of its sales -- about \$3.5 million a year -- in R&D. The investment pays off. Inverpower's sales increase every year, and 70 per cent of its sales are export sales.

Ballard Battery Systems Corporation invested 10 years in the development of a lithium dioxide battery, which has a shelf life of 10 years and can function in temperatures ranging from -40°C to +50°C. Eighty per cent of Ballard's production is exported, and Ballard has won a 13 per cent share of the North American market, despite tough competition from U.S. battery giants.

In Gloucester, just outside Ottawa, State of the Art Electronik sets the standard for professional loudspeaker systems for recording studios and broadcasters. State of the Art Electronik works with the Canadian Research Consortium and the National Research Council on R&D that will help the company -- and other Canadian companies -- hold the lead in this technology.

Many of our small- and medium-sized businesses find it difficult to fund R&D, whether related to products or processes. The university-based network of 15 centres of excellence provide