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CANADA'S SCHOOLNET LEARNING WITHOUT BOUNDARIES



MEASUREMENT

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M E A S U R E M E N T

H i g h l i g h t s

SchoolNet recognizes the value of monitoring the integration of information and communications technology (ICT) in schools. Assessing facilities, current uses and implementation obstacles can help to guide planning and resource allocation at all levels from national to local. SchoolNet is collecting data from school boards, districts and divisions with its On-line Connectivity Survey. This initiative complements results from the Second Information Technology in Education Study (SITES) conducted by Statistics Canada, where data were collected for Canada and other countries by using provincial samples for elementary (grade 5), intermediate (grade 9) and secondary (end of high school) during the 1998-99 school year.

CONNECTIVITY

Schools and school boards across the country have acquired large numbers of computers and have invested in local area networks (LAN). Although schools are progressing towards networked computing in classrooms, there is a wide range of computing power and networking capacity.

- The average ratio of students to Internet-connected computer is 8:1 across the country
- The majority of computers are connected to a LAN in computer rooms
- Approximately 48% of school computers are fully networkable, multimedia (Pentium, Mac 603 or higher)
- Over 90% of students attend a school with instructional Internet access
- Internet connectivity is 53% via school board networks (1.5 Mbps or better), 21% via dial-up (28-56 Kbps or less), 19% via provincial networks (T3-OC3 up to 45 Mbps) and 7% via satellite (10-56 Kbps)

ICT USE IN CLASSROOMS:

Comparing elementary and intermediate/secondary classrooms:

- 83% of elementary schools (compared with 58% intermediate and 52% secondary) are pursuing the policy objective of at least one computer in every classroom. This objective is currently realized in 55% of elementary, 21% of intermediate and 14% of secondary schools.
- Between 55-60% of students will have used e-mail and/or the Internet by the end of the school year
- In elementary schools, 54% of teachers integrate e-mail and the Internet in their teaching (compared with 22% intermediate and 21% secondary)

CANADA - INTERNATIONAL COMPARISONS (1999)

- Average ratio of students to instructional computer: Canada 6:1, USA 6:1, Norway 13:1, Japan 18:1

Note: The U.S. ratio comes from the National Center for Education Statistics' "Internet Access in U.S. Public Schools and Classrooms: 1994-99"

- Estimate of country's schools using Internet for instruction: Canada 82%, Norway 79%, Japan 28%
- Estimate of country's schools where more than 50% of students use e-mail: Canada 61%, Norway 38%, Japan 12%
- Estimated proportion of multimedia computers: Canada 42%, Norway 41%, Japan 54%

Assessing Local Use and Needs

- In Canada, 59% of Internet connected computers are located in computer labs; 32% are in classrooms and 9% are in libraries, while in the USA, 43% are located in computer labs, 48% are in classrooms and 9% are in libraries

Note: The U.S. percentages come from the Center for Research on Information Technology and Organizations's "Teaching, Learning and Computing: 1998 National Survey"

OBSTACLES TO ICT USE IN CLASSROOMS:

Principals identified these obstacles:

- Insufficient access to networked computer technology in classrooms
- Lack of professional development opportunities for teachers
- Need for technical support
- Time for teachers to adopt and adapt technology as an integral part of their teaching

The SITES information underscores findings in SchoolNet's research on benefits of educational ICT; successful use requires simultaneous support and innovation in curriculum, pedagogy, assessment and school organization along with appropriate access to technology in classrooms.

This brochure is one of five describing the activities of the Working Groups of the SchoolNet National Advisory Board. Through the efforts of Industry Canada's SchoolNet, a collaborative initiative of federal, provincial and territorial governments, the private sector and the education community, Canada became the first nation in the world, on March 30, 1999, to connect its schools and public libraries to the Information Highway. SchoolNet is part of Connecting Canadians, the Government of Canada's strategy to keep Canada among world leaders in connecting its citizens to the Internet. The other brochures in this series are Connectivity, Professional Development, Research and Social Issues.

To obtain additional brochures, the full research report on measurements or more information on Canada's SchoolNet, visit www.schoolnet.ca or contact:

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Schools and school districts can use local as well as national and international data to monitor progress and support decision-making. Some questions to use for local assessment might be:

- ◆ What is the ratio of students to fully networked computers? (in classrooms, libraries and labs)
- ◆ Besides the Internet, what other types of instructional resources are available in classrooms? (e.g., computer-based learning resources, other software-curricular and standard applications)
- ◆ For what proportion of the day are computers on, accessible and being used?
- ◆ What incentives and support are there for teachers to integrate technology in their instruction? (access, technical support, professional development, learning resources, software, etc.)
- ◆ In what ways are teachers regularly using technology for instructional and assessment purposes?
- ◆ What skills do teachers have and need to use technology effectively?

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