CANADA'S SCHOOLNET

LEARNING WITHOUT BOUNDARIES

RESEARCH

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Canada

This balanced approach is preparing students to cope with requirements of knowledge work and lifelong learning. Examples include:

Research in the Early Stages

What are the long-term benefits of integrating information and communications technology (ICT) in teaching and learning for K-12 schools? Although standalone computers have been used in many classrooms for over 10 years, networked technology is relatively new for schools. But research in the early stages helps to assess some of the promise, the possibilities and conditions for success. Generally speaking, in research reports prepared for SchoolNet and in studies conducted by the TeleLearning Network of Centres of Excellence research teams, there are two important overall findings. First, in situations where appropriate support conditions are provided for teachers, increases in student learning are found. Also, integrating ICT in classrooms is enabling teachers to shift their pedagogical approach towards a balance between teacher-centered instruction and learner-centered, collaborative problem solving and in critical thinking.

Interactive computer-based learning resources: These provide visual displays, simulations and other interactive learner-centered activities. Students can simulate experiments otherwise too expensive, time consuming or dangerous. Early research shows these types of resources can have a positive effect on concept learning.

Linking in networked communities: Students are able to improve their skills by exchanging and discussing work with peers, experts or teachers using network conferencing. In projects such as Writers In Electronic Residence and SchoolNet's News Network students have shown improvement in multimedia journalism and writing fluency.

On-line collaboration: Students engage in inquiry with others in and beyond their classroom. Their interaction can be managed using computer-supported learning systems such as Knowledge Forum® software designed to make learners more productive, responsible and active. In programs such as GrassRoots, students and teachers collaborate in well-organized and structured projects.

On-line information access: Students go beyond the textbook and the teacher to find information on the Internet. When properly used this provides opportunities to develop learner's skills in selecting and organizing information and critical thinking.

SOME EARLY SUCCESSES

In the early stages, research indicates that schools can expect student gains in both the content and processing level. They include:

◆ Acquisition of computer and networking skills
◆ Availability of a larger range of courses through distributed learning
◆ Increases in academic subject learning
◆ Engagement with exciting and challenging technologies
◆ Broader range of learning activities

Teachers are beginning to experience enhanced professional development opportunities.

CONDITIONS FOR SUCCESS

Networked computers are useful where they support the social interaction between teacher and students that begin in the classroom. Networked computers are most likely to be effective in classrooms where students:

◆ learn prerequisite information skills
◆ have access to extended sources of information
◆ engage in activities in a real context
◆ design and produce their own representations of knowledge
◆ get involved in intra- and inter-classroom talk
◆ get more individual attention (face-to-face or on-line)
◆ develop project management, reasoning and research skills
◆ create learning artefacts (text, picture, video, audio, web site, etc.)
◆ have equal access regardless of gender, disabilities or learning styles

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, Measurement and Social Issues.

To obtain additional brochures, the full research report on benefits of using ICT in K-12 classrooms or more information on Canada's SchoolNet, visit www.schoolnet.ca or contact:

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