

SEEDS AND SPARKS

Evaluation of the Hotline Program of the Alberta Science Networks Report Summary, April 2004

A. Introduction

The Alberta Science Literacy Association (ASLA) consists of five independent networks, located in cities across the province, Calgary, Edmonton, Grande Prairie, Medicine Hat, and Red Deer. The networks provide a variety of activities to foster interest in science, with an emphasis on the provision of support for educational programs. The Hotline program is the main focus of each network. Through this program, volunteer scientists, technicians, engineers, mathematicians and others visit schools to provide presentations relevant to the provincial science curriculum.

The evaluation of this program was conducted to examine its effectiveness and impact, and to determine the success in reaching its goal: "To provide a positive science experience to children through direct contact with the science community". E Squared Consulting of Calgary was contracted to provide the evaluation services. Data were collected in fall, 2003 and the final report was provided in February 2004.

B. Findings of the Evaluation

1. Program Strengths

- Students had the opportunity to be in direct contact with a number of scientists who were often from their local community.
- Scientists shared their knowledge, enthusiasm and personal experience.
- Students were involved in hands-on experience of science with a knowledgeable practitioner. (This was a repeated theme in the student discussions.)

i. Impact of Presentations on Students

- Student interest in science is stimulated.

Teachers (95.2%) believe that student interest in science is stimulated by the presentations and this was fully supported by student feedback. In addition, this interest was long lasting. In the interviews with the high school students, they sometimes referred to presentations that had occurred years previously.

Some teacher comments:

*"The scientists bring the curriculum to life and in my opinion, reality beats virtual science."
"It amazed me how electric the atmosphere became, and how interested the kids were."*

A student's comment:

"Scientists can tell you so much more."

- Student awareness of science in everyday life increased.

Students readily discussed how their awareness of science and the way they look at the world around them changed as the result of a scientist presentation. They gave numerous examples of how their way of seeing had changed, how they examined, questioned, acquired new knowledge.

ii. Impact of Presentations on Teachers

- An exciting and very valuable finding regarding the Hotline program was that the presentations have a wide impact on classroom instruction.

Close to 85% teachers reported that their teaching had been changed due to the visits of the volunteers. Another 4 (4.8%) said their teaching may have been changed. This foretold an advantage for both current and future students. Classroom presentations by volunteers therefore did not just benefit children immediately in front of them, but thousands of other students in classes still to come.

Some teacher comments:

"The visits have increased my knowledge and given me some new presentation ideas."

"I am more aware of how my instruction will be extended."

"As an elementary generalist, I have learned strategies for teaching topics and have acquired background knowledge that has helped me with the more technical topics."

iii. Impact of Presentations on Scientists

- Presenters also learn from the presentations.

Some presenter comments:

"Volunteers learn about the needs that are out there for program development."

"There are thoughtful intelligent questions from the kids [to be answered.]"

"It keeps a reality check on your role as a researcher."

2. Areas of the Program to be Changed or Strengthened

There were no aspects of the program that were suggested for elimination and no overall pattern of weakness. The main recommendations from participants focused on doing more of what was already being done:

- Increase number of scientist volunteers.
- Develop public and professional awareness of the program.
- Inform scientist volunteers of the 'big picture' of the networks and the province-wide nature of the program.
- Decrease response time needed to find appropriate volunteers.
- Increase funding to networks in order to provide extra staff and decrease the amount of time spent by network directors on clerical and bureaucratic demands.

There was some concern that if the program continued to increase, the level of service might drop due to the inability of network directors to offer more services than were currently available. Some networks were being forced into a position of having to select which services to continue.

3. Other Findings

i. Commitment to the Program:

Scientists who volunteered for this program were very enthusiastic regarding their participation. A total of 88.1% said they would recommend it to their colleagues. There was the caveat that not all colleagues would be appropriate. The teachers (97.6%) were clearly active in recommending participation in the Hotline to other staff members.

There was also a remarkable level of continuous volunteering on the part of the scientists. Over 80 per cent had been active for over three years, and almost 60 per cent for over five years. This was accompanied by the declared intent of the volunteers (88.1%) to continue during the next school year. Reasons for possible withdrawal were generally due to health or geographic move. Hotline volunteering was considered by many as both a professional duty and a personal pleasure.

ii. Starting up a Hotline program:

Recommendations were made by current network directors on the successful implementation of future networks.

iii. Evaluation completeness:

A review of other programs offering services connecting scientists with schools found few evaluations. In those that had been completed, there was a very limited approach to data collection in contrast to the range of data collection used in the present evaluation.

C. Overview of Evaluation Process

The emphasis of the present evaluation was to obtain a 360-degree perspective on the Hotline program and to incorporate a range of data collection methods.

Data were collected by surveys, focus groups, and both telephone and face-to-face interviews. Participants and procedures in the evaluation included the following:

- network directors (interview x 5)
- volunteer scientists (interview x 42)
- classroom teachers (survey x 84/31.8% return; focus group x 2)
- school administrators and school board consultants (interview x 7)
- students (focus group x 4)

Total Number of Participants: 173

The evaluation was conducted within the ethical guidelines of the Canadian Evaluation Society and followed the requirements of the Freedom of Information and Privacy Act.

D. Conclusions

The evaluation of the Hotline Program of the Alberta Science Networks indicated that the program was very successful in making an impact on students, teachers and the science volunteers. It was effective in meeting its overall goal and had positive impacts on current and future students.



Further information about the Alberta Science Networks, the Hotline Program and this evaluation may be obtained from:

Janet Hutchinson
Executive Director Alberta Science Literacy Association
Ph: (403) 245-8942
Email: info@asla.ca