



Community Learning Centre

"Video-Conferencing in the Classroom": Results of the Online Teacher Survey

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In March 2009, the CLC project invited teachers in the 22 CLCs to participate in an online survey on the video-conferencing network (VCN) in classroom teaching. The objectives of the survey were to: gather feedback from teachers on the training and technical support offered, learn how teachers have used the VCN in the classroom, identify the benefits and challenges associated with the technology, and obtain recommendations that will enhance the CLC project's attempts to support the integration of the VCN into classroom teaching. A total of 31 teachers responded to the survey; however, it was only possible to use responses from 25 questionnaires, because several were left incomplete.

Profile of Respondents

The profile of the 25 respondents suggests that the VCN appeals to a broad range of teachers. There is considerable variation among teachers in terms of their years of experience, academic subjects, and types of schools. A higher proportion of primary teachers than secondary teachers completed the survey. Whether this reflects the greater use of the VCN by primary teachers due to factors such as the curriculum or the available supply of activities is unclear. This result could also reflect the backgrounds of teachers who were reached by the survey and/or who participated in the training.

- Nine respondents teach exclusively at the primary level and another three teach only at the secondary level. The other 13 respondents teach a mix of grades, including kindergarten, primary and secondary.
- The background of respondents shows: 24% had less than five years of teaching experience; 44% had 5-14 years of experience; 28% had been teaching for more than 15 years.
- A little more than half of the teachers (n=13) have been working in the CLC for less than five years. The remaining 12 teachers have spent five to more than 15 years in the CLC.
- The majority of teachers, or 52%, teach three or more subjects. In addition, 16% of respondents teach English and Math combined, and 20% teach only French. The remaining three teachers specialize either in math, technology or the arts.

Feedback on the CLC Project's Support for the VCN in the Classroom

The survey reveals that teachers in CLCs who have used the VCN have become fervent believers in the technology's potential as a teaching tool. Their comments regarding the impact of VCN sessions on students indicate that they have found it effective in promoting student engagement and learning in the classroom. One teacher even went as far as to suggest that all teachers should receive training on the VCN.

The Training & Technical Support

Teachers were generally quite satisfied with the training offered by the CLC project. However, they also recommended that future sessions should be longer and more in-depth in order to allow teachers to learn more about available VCN activities and to practice using the technology. The CLC training sessions were designed to give a first introduction to the field of "educational video-conferencing." This feedback suggests that the training has succeeded in giving teachers sufficient motivation and ideas to begin using the VCN in their classrooms.

- The majority of teachers (n=22) indicated that they were fairly satisfied with the training offered by the CLC project. When asked to indicate to what extent the training was successful in familiarizing them with the technology, eight answered that it was "considerably" successful and 14 said it was "moderately" successful. Only three indicated it had been "minimally" successful.

- The aspects of the training that teachers found most useful were: a) discussions on how to integrate the VCN into the curriculum; b) the information provided on websites, content providers, and other collaborative projects.
- The suggestions that teachers gave for improving the training fell into two main categories: a) **more information on the range of possibilities for using the VCN and step-by-step procedures** to organizing and holding a VCN session (e.g., list of websites and content providers, and sample lesson plans for specific subjects), and b) **a longer and more hands-on training workshop** that includes elements like “more practice with the VCN,” “more concrete examples of its use” and more “pre-presentation guidance and instruction.”
- The 23 respondents who said they would be interested in attending a future training session selected two key themes: “how to plan curricula with the VCN” and “effective ways to teach with the VCN.”
- The types of technical support that teachers said they would like to continue receiving are: a) IT support or support from the CLC Coordinator, b) information on schools around the globe with VCN capabilities, c) a list of websites and content providers organized by grade level, subject matter and with a rating system, d) individual support in preparing for and conducting a VCN session, particularly when it is the first time.

Nearly all of the teachers who responded to the survey said that they would like both to participate in follow-up training and to continue receiving assistance in identifying and planning for VCN activities in the classroom.

Adoption of the VCN

Since the training sessions began in 2007, teachers in CLCs appear to be using the VCN to an increasing degree. It is also encouraging to note that most teachers have encountered few problems in using the VCN.

- A little over 50% of respondents used the tool between “3-5 times” or “5 times or more” since participating in the training (n=13). Another six used it once or twice, and six did not use it at all. All of the teachers who have used the VCN said they would continue using it. Those who

had not used it said they planned to do so in the future.

- The teachers who used the VCN the least frequently or not at all were more likely to have attended training sessions during 2008-09. This suggests that “time” is an important factor in influencing the adoption of the VCN. Indeed, when teachers were asked to identify factors that would inhibit other teachers from using the VCN they most frequently identified “time” and “experience with ICTs and the VCN.” The costs associated with activities also came up as a third important factor.
- The main reasons that teachers gave for using the VCN were: “to increase student motivation and engagement” (52%); “the availability of an activity” (52%); and “to enrich the curriculum” (44%).

The survey indicates that respondents perceive the VCN as a beneficial teaching tool and many have used it several times since participating in the training. However, practical constraints like “time” may prevent teachers from making greater use of the technology.

Challenges

- A total of nine respondents indicated they had either “rarely” or “never” encountered technical problems in using the VCN. Another nine teachers indicated that they faced problems “sometimes.” Only one teacher said it was “frequently.”
- Technical problems, such as poor connectivity or visual and sound quality, were only rarely cited as having affected the effectiveness of a VCN session. In general, teachers report that the VCN is a simple and easy technology to use. Despite this, technical problems cannot be ruled out given that over 1/3 of respondents faced difficulties at least “sometimes.” Moreover, the data indicate that teachers often turned to someone else to resolve problems. Of the 17 teachers who reported difficulties, nine turned either to the CLC Coordinator or an “IT technician” for assistance.
- Respondents did not cite technical problems as a major obstacle. The main challenges they identified were “time to plan and prepare activities” and the affordability of content providers. In addition, one teacher spoke of the difficulty of engaging students effectively in a session that was being conducted for the first time. Fortunately, this kind of challenge

can be easily overcome with adequate preparation and training. Another teacher remarked that s/he was disappointed with the quality of some content providers and recommends that a rating system be established.

Although the VCN is a technology that teachers find relatively easy to use, they may still need access to technical support when difficulties arise.

Activities Implemented with the VCN

As shown below, the two most common activities that teachers implemented with the VCN were “virtual field trips” to museums or other educational sites (e.g., Biosphere), and exchanges with outside experts. The next most common activity was a collaborative project. Several teachers implemented collaborative projects with schools in other Canadian provinces and in other countries, including the United States and as far as Hong Kong. In addition to classroom activities, a few teachers used the VCN to participate in professional development sessions.

Table 1: Types of activities implemented

In what ways have you used the VCN?	Number of times used
Virtual field trip and/or content provider	16
Collaborative project	7
Professional Development	5
Other (workshop for students)	1
Total	29

Exhibit 1: Examples of Activities

Exchanges with experts:

- √ Discussion with a scientist at the Canadian Space Agency
- √ Talk on the environment with a specialist at the Biosphere
- √ Presentation by a health educator on “sexual health.”

Examples of virtual field trips:

- √ Visit to a museum in Cleveland in the United States (US).
- √ Discussion on tessellation with a US museum for an enriched math class
- √ Visit to a dinosaur museum and discussion on the rainforest.

Positive Aspects of the VCN as a Teaching Tool:

Teachers report that the VCN has had clear, positive impacts on teaching and student learning. Their responses indicate that the VCN is beneficial in several important ways:

The VCN offers new and exciting possibilities for teaching and learning:

Teachers remark that the VCN offers an interesting and innovative alternative to the standard methods of teaching, such as textbooks and the internet. The interactive and visual nature of the technology also appears to heighten students’ interest in a given topic. As one teacher described, *“it (the VCN) brought a dynamic element into the curriculum. Yes, they (the students) were writing but writing for someone across the world brings a different sense of motivation.”* When asked to describe the most valuable aspect of the VCN for students, one teacher responded, *“meeting new people and being able to get answers from them right away. It also gives them a new way of presenting information.”*

The types of activities available through the VCN can complement and enrich the curriculum:

Teachers have found that VCN sessions help them enrich the content and delivery of the curriculum. According to one teacher, *“it enriched what they (the students) had already learned about extreme weather when we studied it in class.”* Another teacher indicated, *“it is interactive and allows you to bring specialists into the classroom to help you teach different topics.”*

The VCN may enhance students’ appreciation of the real world applications of their learning:

Teachers remark that VCN sessions with content providers enable students to study the applications of the curriculum in the real world. As one teacher described, *“the VCN opens the world for them so that they can see that the knowledge they are acquiring extends beyond the boundaries of the classroom or textbook.”* Or, as another teacher described, *“they see the application of your subject in the outside world.”*

The VCN can promote student engagement in the classroom:

The VCN is a medium that can promote a higher and more open level of student participation in class. As one teacher expressed, *“the interaction between the student and provider makes it exciting and therefore engaging to the student!”* A few

teachers also pointed out that *all* students participate during VCN sessions. They indicated that the technology is one that is accessible and interesting to all kinds of students, regardless of ability or skill. Another teacher remarked that the technology may be particularly effective at engaging students who are less inclined to participate in class, as she expressed, *“it is a different way to present information that might engage students who would otherwise not be reached.”*

The VCN helps students to learn and retain more from a classroom lesson: Teachers claim that VCN sessions have the potential to enhance students’ capacities to retain information and to learn. This is probably particularly true in VCN sessions that depart from the standard lecture and embody the best features of an engaging pedagogy (e.g., interactive conversations between students and experts, real-life applications of learning).

The VCN enables students to participate in enriching activities that would otherwise be inaccessible due to cost and/or distance: The VCN allows teachers and students in CLCs to take advantage of educational programs and opportunities in English that are located outside the community and often in remote locations. Below are just a few of the quotes illustrating this role of the VCN:

- *“It’s a great way to enrich the curriculum in the schools without even going anywhere.”*
- *“Being able to visit places without all the costs involved in an actual field trip.”*

The VCN gives students the opportunity to meet and exchange with peers in other communities and to form unique cross-cultural friendships. Collaborative projects and exchanges between students from different schools can broaden and enhance students’ understanding of other communities as well as their own. Below are quotes from teachers that illustrate this view:

- *“It opens a child’s imagination and allows them to experience and learn about different cultures.”*
- *“It opens new worlds to students who may never get the chance to see the world.”*
- *“They interact with peers outside the community and by extension, their comfort zone.”*
- *“The activities had a positive impact on students. Even when there were*

difficulties, they were anxiously waiting to see their friends in Hong Kong. Other video-conferences went very well with ALL students being engaged in learning!”

Perceived Impact of the VCN on Students

Teachers indicate that VCN sessions have had significant positive impacts on student motivation, engagement, and learning.

The VCN allows for direct contact with experts, speakers, and groups of peers. The positive impact of this kind of exchange cannot be underestimated, even if participants are located some distance from each other (BECTA, 2004). Quotes from teachers indicate that the contact over the VCN may even be as powerful as a face-to-face exchange. One teacher reported that as a result of an activity, her/his students *“felt empowered to help the environment.”* Another one remarked, *“students were well engaged and took notes of their own accord! They were so interested. To be able to ask questions and have them answered by the person was wonderful.”*

Conditions for Success

Teachers were asked to identify the factors that will ensure a successful integration of the VCN into teaching. Their responses indicate that “teacher training and professional development” is considered to be the most important factor, followed closely by “funding to pay for VCN activities.” Other factors like time, pedagogical support and materials, and examples of VCN activities were also ranked as being either “very important” or “important” by a significant proportion of respondents (24 of the 25).

The findings suggest that no single factor alone may be sufficient to ensure that teachers successfully adopt and incorporate the VCN into their standard practice. A combination of factors such as technical support, funding, and professional development may be needed over a period of time.

Exhibit 2: Findings from Research

According to one study, the keys to a successful integration of the VCN into K-12 education include (Anderson and Rourke, 2005, p.14):

- ✓ Training and support for teachers and other school-based personnel
- ✓ A leadership vision that emphasizes the benefits of the technology to learning
- ✓ Easy access to the VCN technology
- ✓ Simplicity in operation of the equipment
- ✓ A clear understanding of the costs and learning effectiveness of the technology
- ✓ Development of appropriate instructional designs
- ✓ Effective interaction between and among students and teachers
- ✓ Capacity to match class schedules, timetables, and curricular goals across VCN sites
- ✓ Development and implementation of effective etiquette and behavioural management in the classroom

In their responses to the questionnaire, teachers offered examples of effective practices they had developed or identified:

- 1) *Using the VCN to enrich an aspect of the curriculum and not to teach a subject from "A to Z."* A couple of teachers spoke of how they used the VCN to enrich what students had previously learned in a math and science class, for example.
- 2) *Taking time to adequately prepare students for a VCN session, especially when it is their first time.* For example, teachers remarked that it can be challenging to run a smooth VCN session when students are unfamiliar with the technology and the etiquette for communication, e.g., taking turns to speak or pausing between comments. Thorough advance preparation for teachers and students greatly enhances the quality of the experience.
- 3) *Creating pre and post-VCN exercises to help students process and build on the lessons learned, as one teacher explained, "it is better when there is written work to fill out during interactions and post conference quizzes, etc.; something to keep the students focused on the knowledge to be gained."*

The role of principal support

Contrary to what might be expected, respondents did not identify the role of the principal as being a critical factor either in their own adoption of the VCN or as a factor that would help or hinder other teachers from using the VCN. Observations of the VCN project in CLCs indicate that principals may play an especially important role during the start-up phase, when it is time to introduce teachers to the technology and to build "buy-in." However, the survey data suggest that once teachers have sufficient training and information, they may feel confident and autonomous enough to use it on their own and with little administrative support. In spite of this, the role of principals will always remain important, especially in establishing a supportive environment for teachers to use the VCN.

The long-term future

The integration of the VCN in classroom teaching is likely to continue increasing over time. The proportion of teachers who responded to the survey may only represent a small number of those who are actually using the technology in CLCs. The following quotations reflect this potential:

- *"I think that in time we will use the VCN more and more. Once you realize how much it adds to your student's understanding of the subject and you realize the time it would take you to gather and present the material, you realize that the time spent is well worth it."*
- *"The VCN is such a wonderful teaching tool and I wish I had more opportunities to use it."*

Conclusions

The results of the survey are very encouraging, even though they might reflect the views of teachers who are the most engaged and supportive. It shows that with a little support, teachers can become active users of the VCN in the classroom and that the technology offers many opportunities to enrich the classroom curriculum and students' learning experiences.

This survey and other research indicate that incorporating the VCN into classroom activities requires some degree of advance planning and preparation (BECTA, 2004), which may be difficult for teachers to fit into their already busy work schedule. The issue of time may never be entirely resolved, but it may become

less of an obstacle as teachers gain increasing knowledge and experience.

Results of the survey have also shown that a successful integration of the VCN into teaching requires that teachers have continuous access to information, training, financial resources, and technical support. The CLC project can respond to some, though not all, of these needs. Administrative support will also be crucial to sustaining and developing teachers' capacities to employ the VCN successfully. In addition, School Boards remain essential to ensuring that teachers have access to technical assistance when they are faced with problems they cannot resolve on their own.

The way forward

The teachers who responded to the survey gave valuable feedback, ideas and suggestions. This information is being taken into account in the CLC project's plans for the current year. The goal is to maintain and expand on the support that has been offered to teachers since 2007. This includes:

- 1) Providing information on activities, resources and tools through the listserv and website on educational video-conferencing. Visit:
<http://www.learnquebec.ca/en/content/clc/EducVideoconf.html>
- 2) Responding to individual requests for information and assistance;
- 3) Organizing follow-up training sessions on topics like "best practices" and effective pedagogical methods;
- 4) Coordinating special projects such as "Health Week" and "Literacy Week" in which various educational activities will be offered to teachers and students via the VCN.

We thank you for participating in the survey and look forward to continuing to work with you!

Contact Information:

Michelle Fontaine remains the CLC project's pedagogical consultant on educational video-conferencing. She will continue to organize training sessions and be available to answer questions and requests for assistance. To join the CLC listserv on educational video-conferencing, please contact Michelle Fontaine at fontainem@cqsb.qc.ca.

The CLC project has recruited a new team member, Craig Bullett who will serve as the "Video-Conferencing and Technical Coordinator." He will support CLCs in using the VCN to: a) connect with local and global communities, b) develop opportunities for collaboration, and c) promote the sharing of best practices. To contact Craig Bullett, please write to cbullett@learnquebec.ca. Suggestions are also welcome.

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References:

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