

## **THE INUIT KEYBOARDING PROJECT: A CROSS-CULTURAL TEACHING EXPERIENCE**

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Using videoconference technology, a group of eight young Inuit students were taught weekly music and keyboard lessons over a four-year period. This study was designed to examine how technological and cultural aspects prompted changes in the teaching strategies, and how this affected student achievement. We used several data collection tools, including field notes, lesson plans, lesson recordings, interviews and questionnaires in order to answer these questions. The technical set up and physical logistics, cultural challenges, pedagogical issues, and students' progress will be presented. Results indicate that, although teaching techniques needed to be altered in order to accommodate the videoconference medium, the students were able to achieve a high level of success. The reasons for their progress offer much insight into distance teaching under these conditions. *Keywords:* distance learning, videoconference, cross-cultural education Inuit students, music teaching, Yamaha method.

### **Introduction**

Although the concept of learning from a distance has been present for centuries, only in recent decades has technology allowed for interactive learning through videoconferencing (Masum, Brooks, & Spence, 2005). Due to its synchronous nature, which requires both parties to be present at the same time, videoconferencing has not been utilized to the same extent as internet learning or other asynchronous forms of communication. Yet Greenberg (2004) and Masum et al. (2005) point out that videoconferencing facilitates far greater interactivity than any type of asynchronous technology as it allows for body language and gesture in communication, which deepens emotional bonds. Since videoconferencing has been in use for over twenty years, the technology is maturing and can provide reliable picture and sound quality. The advantages of videoconferencing over other forms of asynchronous teaching are especially apparent when considering its use in instrumental music education, since it provides the best possible representation of traditional face-to-face music lessons, and this teacher-student contact is vital in this type of instruction.

There are many challenges to teaching music at a distance. Ruippo (2003) of the Sibelius Academy in Finland outlines some of the difficulties in arranging music teaching at a distance. It is challenging (a) for the teachers, because they most likely have little or no experience in this environment; (b) for

universities, because they have to learn how to administer the combination of distance and face-to-face learning; and (c) for students, because they have to adopt a new approach to pursuing their studies. One particular challenge for teachers is that they often need to give more responsibility to the students than they are accustomed. Also, the time delay associated with videoconferencing makes it impossible for the teacher to play and evaluate the students' playing at the same time, which will require teachers to change the way they normally teach. Ruippo also believes that it is very difficult to construct a distance music course using only either videoconferencing or internet correspondence, instead both must be used.

There have been a small number of projects involving teaching instrumental music to students in elementary or secondary school using videoconference technology. Rees and Downs (1995) presented the work done via the Iowa Communications Network (ICN). Much of the video-based learning carried out using this network involved post-secondary students; however, there were also some broadcasts to public schools. Performance master classes were provided for secondary school students by the music department at Iowa State University. Harp lessons were also taught to four secondary school students on alternate weeks in a live format and through videoconference for one year. Maki (2001) explored teaching music history, theory, singing and instrument playing from the University of Oulu in Finland to remote villages. The study showed that definite drawbacks to teaching music via the medium of videoconferencing ("the medium") include difficulties with evaluation of student learning, time delays, and poor picture and sound quality. Maki also noted that teaching music history and theory worked much better than teaching singing or instrument playing through videoconference, both due to the implausibility of teacher and students playing at the same time and because the teacher was not able to physically assist when needed. These conclusions were echoed by Riley (2009), who led a project in which elementary school students in Mexico were taught from American universities by preservice music teachers. This is one of few music education studies that also involved an element of cross-cultural teaching. Riley found that the language barrier combined with lack of physical proximity slowed progress considerably and resulted in a frustrating experience for many of the teachers.

In 2002, the Institute for Information Technology at the National Research Council of Canada (NRC) and the Communications Research Centre of Canada (CRC), in partnership with various elementary and secondary schools



across the country, began the MusicGrid program in 2002 in order to study how video technologies can be tailored to promote interactive learning. Masum, Brooks, and Spence (2005) outline the success of the MusicGrid project, which involved weekly trumpet and violin lessons to schools in remote locations in Canada as well as master classes by Pinchas Zukerman from Ottawa to the Manhattan School of Music (Orto & Karapetkov, 2008). All of these projects demonstrated that videoconference technology is an appropriate means of delivering instrumental music instruction at a distance. Yet, none of these projects involved either teaching young students or keyboard instruction, and so the need for a teaching project with these parameters remained. It is for this reason that the Inuit Keyboarding Project was formed in the fall of 2003 as part of the larger MusicGrid project. It was designed to provide keyboard lessons for young children at Ulluriaq School in the remote community of Kangiqsualujjuaq, Quebec, who otherwise would not have access to music education. This program was originally designed as a teaching experiment, but the lack of research on distance learning prompted the author to design an associated research project.

### **Research Problem**

Due to the increase in the use of distance learning in non-music disciplines in recent years, there has been a significant amount of research on students' perceptions of distance learning (Abdulla, 2004; Armstrong-Stassen, Landstrom & Lumpkin, 1998; DeMarr, 2003; Gottwald, 2005) and student achievement in videoconference classes compared to traditional learning (Collins, 2002; Greenberg, 2009; Nichols & Miller, 1994; Vroonland, 2004). There have also been several studies that explored distance learning to remote communities (Baab, 2004; DeMarr, 2003; McNeal, 1998). Yet there is a definite lack of published research on the use of distance learning in music education. Despite this lack of research, there are indications of an increase of interest in distance music teaching. Conference presentations (notably at the 2010 International Conference on Multidisciplinary Research in Music Pedagogy) suggest that more distance teaching is taking place and several interviews with music educators have confirmed that more teachers are becoming involved in distance learning as a means of enhancing student music learning (M. Goedecke, personal communication, June 13, 2010; J. Snow, personal communication, May 29, 2010). However, the principal focus of these projects is educational. It is clear that many music educators are interested in the potential of distance learning and are experimenting with the medium, but

these projects are usually not contributing any formal research findings that advance our collective understanding. So far, there has been little research published on distance learning in music, particularly on teaching instrumental music classes through videoconference. Most literature on teaching music at a distance consists of descriptive reports of ongoing teaching projects and most involve post-secondary school (Rees & Downs, 1995). For this reason, the research conducted through the Inuit Keyboarding Project is quite unique and provides valuable insight into how music and keyboarding can be taught through videoconference to young students of a particular ethnic background in a remote community.

This study explores two main sets of research questions. The first focuses on challenges presented by cultural issues associated with working within the context of the Inuit community. Important questions include: What difficulties result from the language barrier between teacher and students? Was there any difficulty forming relationships with the students as a result of cultural differences? How did the Inuit culture affect lesson scheduling and student progress? The second set of research questions addresses pedagogical issues present when using videoconference technology: How can difficulties maintaining an appropriate lesson pace be addressed? What possible solutions can be found regarding issues with attempted ensemble work between teacher and students? Did any issues arise with monitoring student progress?

### **Method**

Data were collected through several means. Detailed lesson plans were made for each weekly lesson throughout the project, and these were studied and compared with lesson plans from courses taught in a traditional setting. Lesson plans have been catalogued according to lesson year and number (e.g., year 1/lesson 1). Interviews were conducted informally throughout the project with various members of the teaching team as well as parents and elders in Kangiqsualujjuaq to determine the impact the program was having on the community. Questionnaires were administered to the students by the researcher during a visit to Kangiqsualujjuaq in March 2007. Finally, lessons were recorded and analyzed and have been catalogued in the same manner as the lesson plans. Blogs by the school teacher in Kangiqsualujjuaq were posted; they were reviewed and referred to by the date posted. As a result of using all these data collection tools, results of the current study can provide many important new realizations about teaching music within a cross-cultural videoconference



environment. The technical setup and physical logistics, cultural challenges, pedagogical issues, and students' progress will all be studied based on review of data collected using these tools. To conclude, the students' overall level of achievement will be analyzed and compared to that of students in traditional class settings to determine the relative success of the program. Suggestions for future programs will be made based on these observations.

## **The Development of the Inuit Keyboarding Project**

### **Teaching Method**

The first step in carrying out this project was to determine which teaching method would be most appropriate. Since the participating students would be five to six years old, it would need to be a method designed for young children. Also, keyboard learning was to be an important aspect of the course, but, since this would be the only musical training for these students, the development of general musicianship was also a central goal. For these reasons, the Yamaha Music Education System's Junior Music Course (JMC; Yamaha, 1992) was selected. In this course, keyboards are used as a tool to better understand various aspects of music and to develop creativity, while at the same time developing keyboard playing skills. Students are taught aurally through imitation solfege singing; they then play those same melodies by transferring the memorized solfege pitches to the keyboard. JMC also includes music appreciation and rhythmic movement activities, as well as creativity through keyboard harmony and composition. Music reading is taught as a separate activity until the students become comfortable with keyboard playing and are ready to read and play simultaneously. This balanced approach of JMC allowed for a comprehensive music education program that was ideal for this project.

### **Participants and Project Facilitators**

Many people were required in order for this project to get started and for the lessons to occur each week. Until the music teacher developed a comfortable level of familiarity with the equipment (described below), technical support was needed to facilitate set up and troubleshooting when problems arose. Support was provided at the National Research Council laboratory (NRC), where the lessons were conducted for the first two years. In the third year of lessons, the location of the lessons was changed to the Piano Pedagogy Research Laboratory at the

University of Ottawa. In Kangiqsualujjuaq, one of the teachers and administrators at Ulluriaq School served as teacher and technical support and will thus be referred to as "the facilitator." Since the facilitator spoke English but was not fluent in Inuktitut, the first language of the students, a translator was also needed. One of the teachers at Ulluriaq School volunteered to serve in this role. Once the educators in both locations were in place, the student participants were selected. Although the traditional JMC lessons can involve up to twelve students, the researcher decided that eight students would be a suitable number for this project, since it would then be easier to hear and engage all participants. A letter was sent out to parents of the students in kindergarten and grade 1 classes, and they were asked to reply if interested in having their child participate. The response was overwhelming, and there were far more students interested than there were spots available. The facilitator then selected the participants who were most likely to succeed in the program and those who would be least affected by missing time in their regular classes, since the keyboard class would occur during school hours. While selecting students who already showed a high level of academic success may have influenced the results that might have been found using a random sample, the priority in this case was to ensure that students would not be affected by missing the time in class. For this reason, only high achievers were selected, so this limitation must be taken into account when generalizing results of the present study. Five grade 1 and three kindergarten students were chosen.

In JMC, parental support is central to the learning process. Parents sit in on each lesson in order to provide assistance to their children. This also allows the parents to be aware of what is happening in the class, so that they can help with at-home practice. Since the participants in the distance learning project would be practicing at school with the teachers, the parents did not have to be prepared to practice with their children, but the student participants would still need individual attention during the lesson. This was especially important in the context of the videoconference format, since it is much more difficult for the teacher at a distance to see each student's hands and hear each student individually. The researcher and facilitator determined that the best option would be to have high school students serve as helpers, which would also allow the older students to learn while providing mentorship for the younger students. Each participant had the same high school helper for each lesson and practice session. Figure 1a shows the simple interactions involved in a traditional setting, while Figure 1b



illustrates the complex interactions established in the context of this project.

The videoconferencing equipment used in this project included a Polycom ViewStation FX unit with three cameras (Figure 2). One was the camera from the Polycom, which was pointed directly at the teacher and could also capture the keyboard from a frontal view. The other was a document camera, which was used to show pictures and notes from the students' books and was also used in note-naming exercises. The Polycom unit was controlled by a wand that allowed the teacher to switch between the different cameras, as well as pan, tilt, and zoom the unit's built-in camera, adjust the volume, and mute the microphone. After a few lessons, the students and facilitator in Kangiqsualujjuaq suggested that a camera pointed directly at the

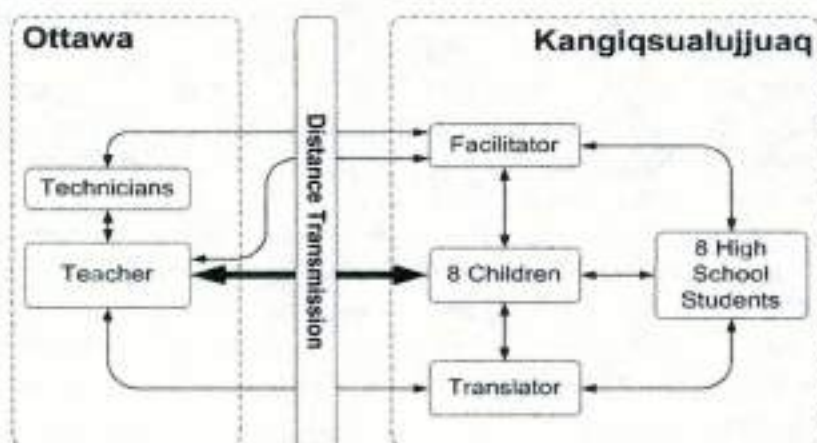


Figure 1a: Traditional setup

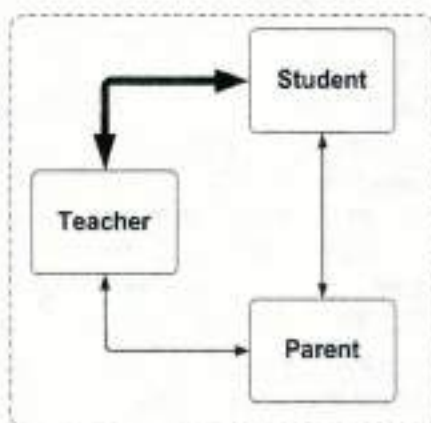


Figure 1b: Distance setup apparatus.

teacher's hands would be helpful. For this reason, the third camera was set up at the left side and above the keyboard,

pointed down so that both of the teacher's hands could be seen. Most often it would capture an image of the entire keyboard, but it could also be zoomed in to focus on the teacher's hands and a smaller section of the keyboard when necessary. This camera angle proved to be somewhat problematic, as it was difficult to position the camera so that the hands were displayed clearly. Since the camera was positioned to the side of the keyboard, the teacher's hands were viewed from an angle, and this made it difficult to discern exactly where the hands were on the keyboard. Ideally, the camera would be positioned high above the keyboard and look directly down, providing a clear view of the entire keyboard and making it easy to see hand position, although it would then be difficult to see which fingers were pressing the keys. Unfortunately, this could not be achieved during the present project, as it would have required mounting the camera from the ceiling, which was not possible in the room from which the lessons were being broadcast.

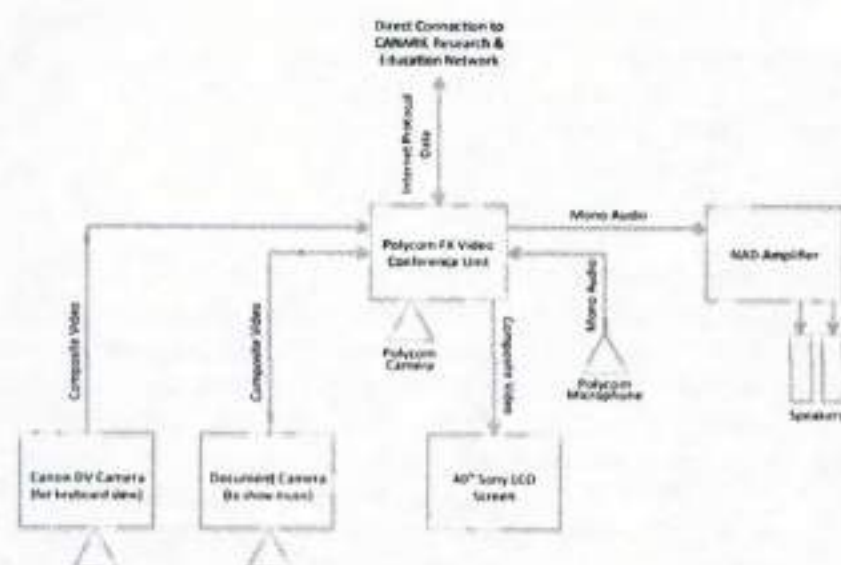


Figure 2. Physical setup at NRC laboratory.

In Kangiqsualujjuaq, the physical set up changed quite a bit during the first year. At first, there was a single camera from the front of the room that provided a wide shot of all the participants at their keyboards and a clear view when the participants were asked to come to the front of the class for singing activities. There was also a hand-held roaming camera that was used when the participants were at their keyboards. Unfortunately, the picture quality from this camera was quite poor when the participants were moving, but it was useful when doing magnet board or written exercises as it allowed the music



teacher to check each participant's work easily and clearly. Once the school teachers in Kangiqsualujjuaq had acquired enough musical knowledge that they could check the magnet boards and written work easily themselves, the roaming camera was no longer needed. In terms of their view of the teacher at a distance, the classroom in Kangiqsualujjuaq was first equipped with a television set but this was determined to be too small for all the children to see. It was then changed to a projector and screen. Although the picture quality was not high resolution, it allowed all of the participants and secondary school helpers to see clearly. In order to effectively transmit the videoconference data, all sites needed high bandwidth at a minimum of 444Kb/sec. Unfortunately Ulluriaq School had only the minimum requirements, resulting in increased delay and poorer picture quality.

### **Timeline**

In Table 1, we present a timeline of all the significant events throughout the Inuit Keyboarding Project, from the planning stages to the last lesson. Table 2 provides a timeline of a typical traditional JMC class for comparison.

### **Data Analysis**

Many factors emerged in the data analysis, providing valuable insight, which we will present under three categories: (a) cultural challenges, (b) pedagogical issues, and (c) participants' progress. This categorization was determined through examination of the data for factors that impacted the outcomes of the project and required adaptations to the teaching method. Cultural challenges and pedagogical issues are the two key categories that required adaptation of the music teaching. This, in turn, influenced the participants' progress. Analysis and discussion for each category will be provided and suggestions made regarding for future research possibilities based on these observations.

#### **Cultural Challenges**

This is one area that can be most difficult for a teacher with little or no experience teaching students from other cultural backgrounds and who speak a different language. Some of the cultural challenges were apparent from the beginning and adjustments were made before the lessons even began (e.g., the necessity of a translator), while others became more and more

pronounced as the lessons progressed. The language barrier proved to be one of the greatest challenges of this particular project. The translator's first language was Inuktitut, and, although her English was quite good, she had no knowledge of

Table 1

*Lesson Timeline for Inuit Keyboarding Project*

| Date                                | Task  |
|-------------------------------------|---|
| First Year (lesson plans 1/1-1/19)  |   |
| Summer / Fall 2003                  | Determined course format, teacher and selected student participants   |
| October 2003                        | 1 <sup>st</sup> year of weekly lessons begins   |
| February 2004                       | First teacher visit to Kangiqsualujjuaq and first live lesson   |
| March 2004                          | Students begin to play with both hands together   |
| May 2004                            | Last class of the year (lesson 19) and completion of book 1   |
| June 2004                           | Year-end concert at Ulluriaq broadcast to NRC laboratory  |
| Second Year (lesson plans 2/1-2/13) |   |
| October 2004                        | 2 <sup>nd</sup> year of lessons begins and students begin book 2  |
| March 2005                          | Connection cut. Last class of year 2  |
| March 2005 - January 2006           | No connection and no lessons. Students continue to review learned material.   |
| Third Year (lesson plans 3/1-3/8)   |   |
| February 2006                       | 3 <sup>rd</sup> year of lessons begins. Now broadcast from Piano Pedagogy Research Laboratory at University of Ottawa |
| May 2006                            | Last class of year 3 (40 lessons total since October 2003)  |
| Fourth Year (lesson plans 4/1-4/20) |   |
| October 2006                        | 4 <sup>th</sup> year of lessons begins and students begin book 3  |
| March 2007                          | Second teacher visit to Kangiqsualujjuaq and administration of questionnaires   |
| May 2007                            | End of lessons (20 lessons this year, 60 total)   |



Table 2

*Lesson Timeline for Traditional JMC Class*

| Date                                | Task  |
|-------------------------------------|---|
| First Year (lesson plans 1/1-1/40)  |   |
| September                           | Lessons begin with book 1   |
| February                            | Students complete book 1 and begin book 2                               |
| June                                | Students complete book 2 (38-40 lessons this year)                      |
| Second Year (lesson plans 2/1-2/40) |   |
| September                           | 2 <sup>nd</sup> year of lessons begins and students begin book 3        |
| February                            | Students complete book 3 and begin book 4                               |
| June                                | Students complete book 4 (38-40 lessons this year, 76-80 lessons total) |

the musical terms or how they should be translated most appropriately. This resulted in two problems: (a) the translations often took a long time because long explanations were needed rather than using specialized terms in each language, and (b) the participants were often confused, because the translator herself often did not understand exactly what needed to be done. Simple instructions, such as “play with your right hand,” were very easy to translate. However, more complex instructions (e.g., “play more smoothly” or specific instructions about how to physically achieve smooth playing) were quite difficult to translate.

Another problem associated with the language barrier was the increased difficulty in forming teacher/student relationships. Past research investigating Inuit education has shown that forming a warm relationship between teacher and student is especially important in Inuit culture, where an “us versus them” mentality can develop, since the Inuit often feel disconnected from and unsupported by those outside of their community (Berger, 2007; Lewthwaite & McMillan, 2010). The physical barrier of being in separate locations and communicating essentially through a television screen already created significant difficulty in forming those relationships, and this was compounded by the inability to communicate in the same language. This challenge did highlight how much body language and voice intonation can help to create an impression, but having all verbal communications filtered through translation resulted in only the most basic instructions being passed on to students, while virtually no personal conversations took place. Having the

opportunity to visit the participants, conduct a lesson, and lead practice sessions in person was very valuable in forming relationships. The teacher visited Kangiqsullujuaq on two occasions, in February 2004 and March 2007; each visit lasted five days. Although the language barrier was still present, removing the physical barrier and having more time outside of lessons to form relationships was beneficial to the dynamics in the class in subsequent videoconference lessons. A student questionnaire was administered during the visit in March 2007; the students were asked whether they perceived the music teacher or the facilitator as the primary educator. Despite the physical and language barriers, half replied both equally and half replied that they viewed the music teacher as the primary educator.

A third complication caused by cultural issues was the fact that cultural events often took precedence over school and music lessons and resulted in many cancelled classes. For example, when it was duck hunting season or caribou were passing nearby, the school and most of the town would shut down. This must be taken into account by the teacher when planning lessons and trying to predict the progress that will be made over a school year. Such scheduling issues pose a challenge with practice consistency since, during those weeks, little practice is done. When the students return, the teacher must take some time to review the material they were working on before the interruption. Also, in Inuit culture, formal education is often not the top priority (Russell, 2006), and, as a result, there can be frequent student absences. These are all issues that can be managed, but are frustrating for a teacher who is accustomed to working within a more consistently structured timeline.

### **Pedagogical Issues**

One of the most important principles in teaching group classes to young children is to conduct the lesson at a fairly quick pace (Uszler, 2000). This is to maintain student interest and to keep motivation high. Although it may be counter-intuitive for most teachers, it is important to stay in rhythm once the exercise has begun so that students can continue to feel the pulse of the music and become accustomed to staying at a specific tempo within a certain metrical structure, once established. Keeping verbal explanations brief is also a factor in maintaining a quick lesson pace. It is usually most effective to give a very short explanation of what will happen and then to simply model and ask the students to copy, whether playing or singing. These principles set the tone for the class and allow lessons to move along smoothly.



Although there is typically a time delay (latency) with videoconferencing, the lower speed connection in Kangiqsualujjuaq resulted in a delay that was quite pronounced at about 1 second total (0.5 seconds in each direction). The delay made it impossible to stay in rhythm, and, even though it was only about a second, it slowed the instructional pace considerably. Also, because the participants could not see the teacher clearly and she could not see them well enough to ensure that they were all playing what they should be, it was necessary to give clearer verbal instructions, which took more time. These instructions were not just for the benefit of the participants, but also for the teachers and secondary school helpers who had no previous musical training. In addition to the teachers' longer instructions, translation was then necessary, which slowed the pace even more. A teacher with little or no experience teaching at a distance may go into the class expecting it to unfold in much the same manner as traditional lessons. However, it becomes clear from the first class that teaching style and expectations need to be adjusted, especially in cross-cultural contexts requiring language translation. The number of activities gradually decreased throughout the four years as the teacher made adjustments to decreased teaching time during the lessons. For example, lesson 2/1 contained 14 activities, while lesson 4/18 contained only nine activities.

Due to the fact that the participants either did not speak English at all or spoke very little English, it was apparent from the beginning that it would not be worth the time and effort required to teach songs with English words, which is usually a significant part of the JMC curriculum. As a result, the teacher decided to omit singing songs with words altogether and to focus on solfege. This was more of a challenge than it would be for English-speaking students, since some of the syllables used do not exist in the Inuktitut language. The students needed to learn how to pronounce the syllables as well as to learn the pitches. The solfege syllables were partially taught using the same solfege singing exercises that would be used in a traditional JMC class, since the melodies themselves are quite simple at the beginning. However, more rudimentary exercises were also required, such as singing the scale from *do* to *sol* (the only pitches learned in the first few lessons). In reviewing the lesson plans, the researcher observed that the first lesson included the solfege songs that would be presented in a traditional JMC first lesson, but extra solfege exercises were added in the second lesson. It did not take long for the participants to become familiar with the syllables, and they were then able to follow the regular lesson schedule.

Another difficulty associated with solfege singing through videoconference is that it is not possible to accompany the students' singing as easily as in live classes. Because of the time delay associated with videoconferencing, if the piano accompaniment started as soon as the students were cued to sing it would seem synchronized to the students and teachers in Kangiqsualujjuaq, but unsynchronized to the music teacher. This made it very difficult to hear whether or not the students were singing properly, and, for this reason, accompaniment was not played for the first year. Unfortunately, this made it more difficult for the students to sing back in the correct pitch and rhythm. The teachers in Kangiqsualujjuaq were able to play a few pitches on their keyboard if students needed some guidance, but could not offer more than a few notes due to a lack of prior keyboard playing experience. The students found it very helpful to have the accompaniment played for them when live lessons were provided during teacher visits, as noted by almost all students in student-teacher interviews conducted during the first teacher visit in February 2004. As the teacher became more comfortable in the medium and less disoriented by the time delay, accompaniment through videoconference became possible.

Another major difference between the videoconference lessons and traditional JMC lessons is the practice routine. In regular lessons, a parent must always be present and is expected to help with practicing at home as long as help is needed, which is usually for several months or even for the first two years. The students are expected to practice a minimum of five days a week; the length of time each day is dependent on the assignment and the amount of time required by the student to reach established goals. In Kangiqsualujjuaq, the practice sessions took place at the school. The teachers and secondary school helpers were present to assist with written assignments that were given almost weekly. Twice a week, the students and helpers were dismissed from class for 15-minute practice sessions. Students were also given the opportunity to practice after school, but an interview with the facilitator revealed that they rarely took advantage of this opportunity. Even though the Inuit students did not practice as much as most students taking part in traditional JMC classes, they still achieved at the same level for the first two years. Possible reasons for this will be explored later.

### **Participants' Progress**

During the first two years of the present project, there were a total of 34 classes; for traditional JMC groups, there are typically 38 to 40 each year (over double the number). Aside



from the reasons mentioned above, the low number of classes is also due to the fact that the satellite connection in Kangiqsualujjuaq was lost midway through the second year of classes and was not reconnected for almost a year. However, the participants still progressed quite well, especially in keyboard playing. After those 34 lessons, they had achieved the same level of keyboard playing as students in traditional JMC classes after the same number of lessons (which would have been completed in approximately one year rather than two). There are several reasons for this. First, the participants were a year older than most traditional students in JMC, and, because those 34 lessons were spread over two years, the students were actually two years older than most traditional JMC students when they began to work on the more difficult repertoire. Therefore, they had better dexterity and were better able to handle the material. Also, the practice sessions tended to be very focused on keyboard playing rather than other activities such as singing or note reading, so the participants progressed very quickly in developing their keyboard skills. In response to the questionnaire administered during the fourth year of lessons, most participants indicated that they enjoyed the keyboard playing more than any other type of activity (e.g., singing, rhythmic movement, aural drills, or reading drills). This enjoyment provided motivation for the participants to work harder in that area.

Unfortunately, this rapid progress in keyboard playing was to the detriment of other skills. In JMC, all keyboard songs must be memorized in solfege before they can be played on the keyboard. The singing of these songs is assigned for homework for two to three weeks before they are played on the keyboard. In Kangiqsualujjuaq, the practice time was so limited that the facilitator decided to focus on the keyboard playing rather than singing, and, over time, singing skills suffered also because of the difficulty in singing during the videoconference lessons. Although some singing and ear training drills were still done during each class, it was very time consuming due to the videoconference time delay and could not be completed in each class period to the same level as in a face-to-face JMC class.

In the last few months of the fourth year of lessons, progress slowed considerably. At that point, the participants were completing the third book of the four-book program, and the material had become much more difficult. This alone usually causes the progress to slow in regular JMC classes, but, because the singing skills were under-developed progress slowed even more. This could perhaps have been overcome if the participants were able to devote more time to practice, but the structure in place (as described previously) made that very difficult for the

teachers and students in Kangiqsualujjuaq, since students were only allowed to miss short amounts of class time and did not have access to keyboards outside of school. A review of the lesson plans and lesson recordings by the researcher revealed that the last four months of lessons were devoted to the same pieces, which usually would take approximately two months to complete. For example, the piece "Pretty Bouquet" was studied from January 22, 2007 to April 30, 2007. However, the slow progress is likely attributable to the low number of lessons during this period (lessons 4/12 to 4/20).

### **Recommendations for Future Projects**

As the plan was to teach the course for only one year, the Inuit Keyboarding Project was much more successful and the students continued for much longer than originally expected, but there were also many challenges. Some issues were technical, an aspect of videoconferencing in education that should certainly be explored by future researchers. There were also many cultural challenges and pedagogical issues that could perhaps be overcome by reviewing the particulars of the project as discussed above. One technical and pedagogical challenge that emerged was that it was almost impossible to see what each student was doing during the lesson. The music teacher could not chart the progress of each student individually, only the progress of the class as a whole. It is important to have a facilitator on-site to observe the students and provide feedback even if a translator is not necessary, both to provide information to the teacher at a distance and to provide support to the students during the lesson and between lessons. Occasional private lessons may also help the teacher to see how each student is progressing and may also help to build closer bonds between the teacher and students. These private lessons could perhaps be done on a monthly basis in lieu of that week's group lesson or in addition to the group lesson, if time permits. This becomes more important as the material gets more difficult. It would also be beneficial to provide private lessons to the facilitator so that he or she is able to help more effectively, especially during the practice sessions. Again, this may not be necessary in the early stages, but will assist as the repertoire becomes more challenging. During the third year of the project, the music teacher began to record video of the songs that were assigned for the week, so the facilitator could review these resources when needed or show them to the students. These video recordings proved extremely beneficial.

There were also many challenges presented by the cultural differences that were not all apparent at the beginning of



the course but increasingly caused difficulties. Generally speaking, the Inuit are not accustomed to regimented practice and scheduled activities (Russell, 2006), so it was very difficult to establish an appropriate practice routine, requiring some understanding and adjustment by the music teacher. Because the students advanced so quickly at the beginning of the course, it was surprising when they encountered so much difficulty later on. It would perhaps have worked more smoothly if the pace had been slowed to accommodate the small amount of practice time these students had available outside of class. More practice should be encouraged, but the music teacher must be prepared to work within the given context and to be content that the students are still learning music, which would not likely have been possible through traditional means. However, some other solutions may have helped. The parents and students need to understand the commitment level required from the beginning, and only those who are committed to practicing several days a week should take part in the classes, as is the case for most students who take music lessons in a traditional JMC setting. Students should be encouraged and be expected to practice both at home and in a group format at school. Both the facilitator and the distance teacher should have contact with the parents, so that parents can be involved with and informed about the students' progress.

The value of teacher visits to meet and to interact with the students in person cannot be overstated. It was important for all adults and students involved for several reasons. First, it allowed the students and music teacher to develop a typical student-teacher relationship, which can be very different when lessons are taught at a distance. This also allowed assessment of each student more thoroughly than could have been done through videoconferencing. Second, it afforded the teacher an opportunity to see the classrooms first-hand and the manner in which the keyboards, cameras, and projector were set up. This provided a better understanding of their experience during lessons and what changes in these technical aspects might help the lessons to run more smoothly. The weekly lesson was conducted face-to-face in Kangiqsualujuaq, and it was the first time that the students experienced a traditional class. The lesson moved at a much faster pace when the teacher was present in the same instructional space, since there was no delay and less need for translation because body language could be used to communicate; this had a tremendously positive impact on the classroom dynamic, as it kept the students motivated throughout the lesson. The teacher was also able to observe and participate directly in their practice sessions during these visits. The main

difference in both the lesson and practice session was that the students were able to overcome their difficulties much more quickly, because the teacher was able to clearly see what was causing the problem and help them to fix it; whereas, through videoconference, the facilitator and translator in Kangiqsualujjuaq needed to communicate what the problem was, and, since they had no previous musical training, it often took some time to discover the specific issue. At the end of the first visit, the students played a concert for their parents, which was very well received.

Despite the challenges, the students from this class progressed remarkably well and became some of the most accomplished musicians in Kangiqsualujjuaq. This project was not begun in an effort to determine whether distance learning is comparable with face-to-face classes but to provide an opportunity for music education in this remote community. The research project allowed us to achieve a better understanding of how distance education can best be conducted. This would not have been possible without the technology for broadband communication and the willingness of all those involved to take part in a little-explored method of music education.

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### References

- Abdulla, A. G. (2004). *Distance learning students' perceptions of the online instructor roles and competencies*. (Doctoral dissertation). Retrieved from ProQuest Digital Dissertations database. (UMI No. 3137394).
- Armstrong-Stassen, M., Landstrom, M. & Lumpkin, R. (1998). Students' reactions to the introduction of videoconferencing for classroom instruction. *The Information Society*, 14, 153-164.
- Baab, L. (2004). *Effect of selected factors on students' sense of classroom community in distance learning courses*.



- (Doctoral dissertation). Retrieved from ProQuest Digital Dissertations database. (UMI No. 3150346)
- Berger, P. (2007). Some thoughts on Qallunaat teacher caring in Nunavut. *Journal of Teaching and Learning*, 4(2), 1-12.
- Collins, J. E. (2002). *A true experiment comparing learning outcomes of a two-way interactive telecourse and a traditional face-to-face course* (Doctoral dissertation). Retrieved from Proquest Digital Dissertations database (UMI No. 3050786)
- DeMarr, E. (2003) *Student perceptions of distance learning and traditional classroom settings*. Unpublished Masters thesis, State University of New York. Retrieved from Proquest Digital Dissertations database. (UMI No. 1413671)
- Gottwald, W. D. (2005). *A comparison of student perceptions regarding online courses and traditional courses: A case study*. (Doctoral dissertation). Retrieved from Proquest Digital Dissertations database. (UMI No. 3168492)
- Greenberg, A. (2004). *Navigating the sea of research on videoconferencing-based distance education: A platform for understanding research into technology's effectiveness and value*. Duxbury, MA: Wainhouse Research.
- Greenberg, A. (2009). *Mapping the latest research into video-based distance education: The 2009 updated, expanded analysis navigating the sea of research*. Duxbury, MA: Wainhouse Research.
- Lewthwaite, B., & McMillan, B. (2010). "She can bother me, and that's because she cares": What Inuit students say about teaching and their learning. *Canadian Journal of Education*, 33(1), 140-175.
- Maki, J. (2001). *Is it possible to teach music in a classroom from a distance of 1000km?* Retrieved from ERIC database Reproduction Service No. ED466191.
- Masum, H., Brooks, M., & Spence, J. (2005). MusicGrid: A case study in broadband video collaboration. *First Monday*, 10(5). Retrieved January 24, 2006 from [http://www.firstmonday.org/issues/issue10\\_5/masum/index/html](http://www.firstmonday.org/issues/issue10_5/masum/index/html)
- McNeal, J. P (1998). *Site facilitation of distance education via compressed video in rural schools: A case study*. (Doctoral dissertation). Retrieved from ProQuest Digital Dissertations database. (UMI No. 9955226)
- Nichols, J. D. & Miller, R. B. (1994). Cooperative learning and student motivation. *Contemporary Educational Psychology*, 19, 167-178.
- Orto, C., & Karapetkov, S. (2008). *Music performance and instruction over high-speed networks*. Retrieved June 3,

2010.

[http://www.polycom.com/global/documents/whitepapers/music\\_performance\\_and\\_instruction\\_over\\_highspeed\\_networks.pdf](http://www.polycom.com/global/documents/whitepapers/music_performance_and_instruction_over_highspeed_networks.pdf)

- Rees, F., & Downs, D. (1995). Interactive television and distance learning. *Music Educators' Journal*, 82, 21-25.
- Riley, P. E. (2009). Video-conferenced music teaching: Challenges and progress. *Music Education Research*, 11, 365-375.
- Ruippo, M. (2003). *Music education online*. Retrieved March 14, 2006 from [http://movenet.fi/index2.php?option=com\\_content&do\\_pdf=1&id=63](http://movenet.fi/index2.php?option=com_content&do_pdf=1&id=63)
- Russell, J. (2006). What's to be done with the fox? Inuit teachers inventing musical games for Inuit classrooms. *Curriculum Inquiry*, 36(1), 15-33.
- Uszler, M. (2000). The preschool student. In M. Uszler, S. Gordon, & S. McBride Smith (Eds.), *The well-tempered keyboard teacher* (pp. 35-54). Belmont, CA: Schirmer Books.
- Vroonland, D. W. (2004). *An analysis of the effect of distance learning site on student self-efficacy of junior high school Spanish students* (Doctoral dissertation). Retrieved from ProQuest Digital Dissertations database. (UMI No. 3145016)
- Yamaha (1992). Primary music club. Yamaha Music School.



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