SUPPORTING THE LEARNING OF CHILDREN WITH CHRONIC ILLNESS

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ABSTRACT
This qualitative study explores the challenges that chronically ill students face in their learning as a result of prolonged and intermittent absences from school. It shows how the use of iPod technology as a communicative link minimized the impact of absences and allowed the student to experience true inclusion in their classroom, enabling the student to keep pace with the curriculum. The findings of this study also have practical implications for educational policy and suggestions for changes to the educational policy for chronic health.

INTRODUCTION
Education policy in British Columbia favours inclusive education for all children; however, it becomes a challenge for chronically ill students. Advances in information and communication technology are having a significant impact on how schools can support students with chronic illness. This study provides evidence of how educators can use mobile technology to provide academic and social support to such students.

The purpose of this qualitative study was:
(1) To explore the challenges that chronically ill (CI) students face in their learning as a result of prolonged and intermittent absences from school;

(2) To address how teachers can effectively integrate the use of mobile technology to maintain the student’s connection to the classroom; and

(3) To discuss the practical implications of this study for education and district policy.


Background Context
A student, who for this study will be referred to as John, was diagnosed with Medulloblastoma in Grade 1. Due to continuous radiation treatment, he missed significant amounts of Grade 1, 2 and 3. In Grade 4, John was designated as having an Individual Education Plan (IEP) that allowed him the support of a Special Education Assistant (SEA), who would work directly with John in the classroom to support the goals outlined in his IEP. This support continued for grades 4, 5 and 6.

These long absences had seriously impeded his learning, friendships, and grades, which directly affected his confidence and desire to be at school. His parents felt that the school and the learning were good medicine for John and they hoped his Grade 7 year would be more successful. At the request of the Principal, I met the family and devised a plan that would keep everyone connected to John’s progress in school.

Over the next five months, I investigated user-friendly technological tools that could keep John connected to his school, classroom and classmates. By the fall, lessons were recorded on video and audio, using John’s iPod, and photos were taken of whiteboard lessons. Despite many challenges, John met all but one of the Prescribed Learning Outcomes for the first term of Grade 7 curriculum and achieved all A’s and B’s in the various subject areas.

Challenges with the Program
John’s achievement had created many challenges. For example, media consent was required from all parents before any lessons were visually recorded, and extensive training was needed for the SEA so that she could troubleshoot any technological difficulties.

Literature Review
Childhood cancer is considered by researchers to be defined as a chronic illness because the survival rate among children with cancer has increased to 77% (Gorin & McAuliffe, 2009). As a result, “childhood cancer has evolved from a fatal disease to a life threatening chronic disease” (Bessell, 2001, p. 345). Therefore, the definition of chronic illness can be applied to children with cancer (Donovan, 2009). Chronic illness is a “condition that lasts for a considerable period of time, more than three months in a year, or necessitates a period of continuous hospitalizations for more than a month” (Shiu, 2001, p. 270).

Implications of Chronic Illness on Students
A review of the literature on both cancer and chronic illness showed a focus on the implications of childhood cancer survivors in the school and reintegration of children back into the school system after surviving cancer. The types of cancer that affect school aged children most are Leukemia and Neuroblastoma. The effects of such types of cancer are learning disabilities, abnormal growth, hearing loss, vision problems, kidney damage, second cancers and behavioural risk factors such as decreased attention span (Gorin & McAuliffe, 2009). In general, students with chronic illness “experience more academic difficulty than their healthy peers associated with multiple factors such as the disease...
process and treatment consequences as well as social and emotional consequences” (Pais, 2007, p. 2).

Eiser and Town (1987), Nevile and Roberts (1999) and Suzuki and Kato (2003) all concluded that the children were often absent from school due to aggressive treatment, illness or to the students’ fears of being rejected by schoolmates due to the myth that their disease was contagious. Charlton, Pearson and Morris-Jones (1991) reported that children with chronic illness “have at least 50% more absences than their counterparts without chronic illness; that between 17% and 30% of CI children have had to repeat a grade; and 30% to 45% of CI students report falling behind” (p. 3). Wilkie and Jones (2008) reported that “being removed from the classroom context and losing contact with people for significant periods of time may create anxiety and fears about disrupted friendships, and concerns about falling behind academically” (p. 6)

Educational challenges supporting CI students
Research shows that teachers are challenged by long-term absenteeism. Nevile and Roberts (1999) reported that teachers placed lower than necessary expectations on the CI student and did not want to burden the student with missed work as it may add to family stress dealing with the child’s chronic illness. Hospital schools have been established to address the needs of the CI students while children seek treatment (Wilkie et al., 2007), however “pupils whose absence is intermittent are likely to receive no interim educational provision at all” (Suzuki & Kato, 2003, p. 163). Improvements in medical treatments mean that CI children “spend significantly less time in hospitals and longer periods of time recuperating or receiving treatment at home” (Wilkie & Jones, 2008, p. 2) reducing the benefits of a hospital school. To address this issue, many school districts have established hospital homebound programs where these teachers visit CI students at home, approximately twice per week. Although academic instruction is provided to the student, Bessell (2001) and Searle (2006) reported that CI students surveyed felt that “homebound instruction was a poor substitute for real school. Further, Suzuki ans Kato (2003) reported “patients in homebound schooling often feel unprepared to return to their community schools and reported feeling lonely and isolated” (p. 163).

Another option for students with chronic illness is to use distributed learning. Interestingly, a review of the literature reveals that not much attention has been given to the growing availability of distributed learning and how this can benefit students with chronic illness. The Standards for K-12 Distributed Learning in British Columbia defines distributed learning as a “system that responds to the unique learning needs of individual learners, and takes place outside of the traditional classroom”. Distributed learning uses print-based materials, on-line technology, and Web 2.0 tools to deliver the curriculum to students, and the School Act requires that there be no more than 49 percent face-to-face contact. The learning material is available 24 hours per day, 7 days per week; however, the socialization of the student suffers. Shiu (2001) states that “the roles of teachers and counselors as well as the support of fellow students are important determinants of whether a school-age patient will continue with school, with social support playing a more important role than the patient’s state of health and the effects of treatment” (p. 273).
Other studies conducted in Australia recognize the need for change in how educational support is provided for CI students. The program uses synchronous (in real-time) technology to connect the CI student live to the classroom. Wilkie’s study (2010) evolved from previous models that date back to 2001. Those programs established that ICT links between home and school “enables autonomy and individualized learning for students. For students who are unable to attend school, such communication strategies are vital for maintaining contact and involvement both socially and educationally” (Wilkie & Jones, 2008, p. 3). Wilkie’s recent study (2010) focused on “the use of shared online white boarding to allow pupils to participate in tutoring sessions with the teacher during math. It has proven more effective than telephone conversations because teachers can share and provide immediate feedback” (p.10) and students can work with fellow classmates on math problems in a live setting. Fels, Shrimpton and Robertson (2001) also reported that using a synchronous connection for CI students “meant not missing their academic work, maintained a routine, and provided a connection with an important normal and non-medical component of their lives”, adding that “teachers and students were more empathetic and understanding of the CI student’s situation and developed a better appreciation of diversity because the CI student remained part of the school community” (p.21). However, this author questions how much disruption is caused in the “live” learning due to ongoing treatments? Would an asynchronous (not real-time) communication tool be more convenient since the material is available at the student’s convenience?

**THE STUDY**

**Purpose Statement**

Research found so far does not completely address how teachers can effectively integrate the use of technology to keep students with chronic illness connected to their regular classroom during prolonged or intermittent absences. Therefore, the purpose of this qualitative study is to ask: What can school districts do to support the learning of children with chronic illness, such as cancer? At the heart of this study is the principle of inclusion. According to the British Columbia Ministry of Education’s Special Education Services: A Manual of Policies, Procedures and Guidelines (2010), inclusion is the “principle that all students are entitled to equitable access to learning, achievement and the pursuit of excellence in all aspects of their education...and goes beyond placement to include meaningful participation and the promotion of interaction with others” (p. 5).

**Hypothesis**

This study hypothesizes that students with chronic illness who are able to use technology, such as iPod and Web 2.0 technology are:

- Able to experience true inclusion in their own classroom and are able to keep pace with the curriculum, regardless of intermittent or prolonged absences;
- Able to have the social support of a classroom of peers, which provides a sense of normalcy.
Data Source and Method
The data for this qualitative study was collected over a period of eight months. Participants were made aware of the author’s aim and purpose, provided with information about the technology used and their permission was obtained for the study (see Appendix A). No participants refused to participate and all participants were assured that their names would not be used in the study. Criteria required that participants be over the age of 18 and were either a CI student or had experience with a CI student who was absent for a minimum of three weeks of the school year. The participants and the method for gathering data from each group, is detailed as follows:

a) Parents – two separate focus group interviews were conducted of parents belonging to a child cancer parent’s association and a chronic illness parent’s association. Both samples consisted of five parents.

b) CI students – two nineteen-year old CI students were interviewed separately. One student was a terminally ill cancer patient who had recently graduated from a distributed learning school. The other student had kidney disease and recently dropped out of school due to challenges with consistent attendance. All data presented from this area is presented under the pseudonyms of Sam and Kate.

c) Teachers – a focus group interview was conducted of teachers who had experienced teaching a CI student. The sample consisted of two primary teachers (Grades K-3), two intermediate teachers (Grades 4-7), one hospital schoolteacher, and one former Hospital Homebound teacher.

d) The final sample of participants related to the author’s experience with his student, John; John’s parents, his Special Education Assistant and his doctor. As well, an autoethnography was written by the author in order to participate in the study. An autoethnography is a “genre of writing and research that connects the personal to the cultural, placing the self within a social context” (Holt, 2003). The author’s autoethnography was completed using the same guiding questions asked of John’s parents and SEA.

The questions for each interview (see Appendix B) were created from the literature review as well as from observations made by the researcher during classroom experience with John. The questions were used as guides to conversation rather than as an oral survey (Miles & Huberman, 1994).

Analysis of Data
Analysis of the data focused on an in-depth examination of each focus group interview and individual interviews as well as comparing and contrasting data provided by each sample (Stake, 1995). In order to analyze the data effectively, the various groups were placed into larger groups that represented their experience within the realm of chronic illness. Group A consisted of parents of CI students and the CI students, Sam and Kate. Group B consisted of the teachers that had experience teaching CI students. Group C consisted of the parents, SEA, doctor, and teacher (author) who supported John.
The constant comparison method of analysis was used while data was being collected and transcribed. In this analysis, “as soon as a researcher begins to collect data, he or she also begins coding it and examining it in light of more data” (Anderson, Herr & Nihlen, 2007, p. 222) in order to analyze emerging categories as well as analyze similarities and differences within the data. Early line-by-line coding looked for frequency of words used. This led to codes such as, difficulties, experiences, problems, emotional experiences, failure, issues, communication and narrative. These codes were then linked together to create larger categories such as challenges, self-esteem, collaboration and purpose (Anderson et al., 2007).

Once each group was coded, triangulation of the data was then completed in order to converge the data from the multiple sources, describe the recurring themes, and to address any problems of trustworthiness in the data (Miles & Huberman, 1994). Once themes were established from commonalities across the groups, comparative analysis was also completed in order to reveal specific challenges within each group, as summarized in Table 1 (below).

Table 1: Summary of main themes revealed from triangulation of data

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<tr>
<th>Themes From Data</th>
<th>Evidence of Themes in the Data</th>
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<tr>
<td>Challenges in learning</td>
<td>• Strong evidence across all groups that CI students that experience prolonged or intermittent absences face significant challenges at home including catching up on missed work, learning gaps due to lack of direct instruction and the challenge of disrupted friendships or not being with friends due to academic failure.</td>
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| Self-Esteem           | • Strong evidence across all groups that the academic and social challenges create anxiety.  
                       | • Data showed John’s experience differed because the iPod connection maintained his academic and social continuity and had a positive effect on his self-esteem. |
| Collaborative Support | • Strong evidence across all groups of communication challenges between home, school and hospital.  
                       | • Strong evidence across all groups that when support plan is not working, frustration mounts and school just becomes another obstacle.  
                       | • Data showed that John's experience differed as the technology connection between home and school made collaboration stronger. |
| Technology Support    | • Moderate evidence across all groups that technology was used within the classroom for academic support only.  
                       | • Data showed John's experience differed because technology was being used within the classroom as well as to connect John to the classroom from home to provide academic and social support. |
| Role of School        | • Strong evidence across all groups that school gives CI students purpose, a sense of normalcy, distraction from illness, long-term goals and a social connection. |
Limitations of the Research
There are several limitations within the research of this study. First, although the samples used for this study cover a wide variety of groups that have a role within the realm of chronic illness, the sample for each group is considered to be small. Since each type of chronic illness comes with its own set of challenges, it is important to compare and contrast a number of cases, selected for their diversity so that each diverse educational challenge can be met (Wilkie et al., 2007). A larger sample would be beneficial to increase the robustness of findings; to see if similar, or a greater amount, of themes emerge.

A second limitation of this study is that, as in all qualitative studies, the data is ethnographic and descriptive and is interpreted for meaning by the researcher of the study. The data cannot be statistically tested. Moreover, the success of implementing iPod technology to support a CI student is only one experience of a teacher that had the support of an SEA, and is not necessarily representative of the larger situation.

Third, the study uses autoethnographic writing as part of the sample. Wall (2006) states that “by using self as a source of data, autoethnography has been criticized for being self-indulgent, narcissistic, introspective, and individualized” (p. 155). However, to counter, if the research is lacking, then autoethnographic writing should not be dismissed because classroom experience or stories “are more likely to present fuller pictures, ones in which the meaning of events and relationships are more likely to be told than inferred” (Laslett, 1999).

Findings
Challenges for CI students in school. The data revealed that prolonged or intermittent absences from school have a negative impact on student learning and social inclusion, and one of the biggest challenges was keeping pace with the curriculum. Sam reported “fatigue creates a challenge to stay focused” (Interview, 2010). Kate also reported that fatigue played a large factor but sometimes it is “the slow demise of the illness that makes it difficult to know what challenges you will face each day” (Interview, 2010). These frequent absences create snapshots in their learning due to receiving limited direct instruction from the teacher. The experience with John was similar:

The biggest challenge was absence due to chemotherapy treatments, which had an impact on receiving direct instruction and keeping up with the work (Autoethnography).

When John was absent due to medical treatment, he would miss direct instruction and, even though he could catch up reading a textbook, he may not understand the concept just by reading the book (Interview - SEA).

All groups reported frustration over the students having to be pulled out to catch up on missed work while simultaneously missing new materials being taught. Sam commented, “I followed a pattern of one week in hospital, one week at home recovering, and one week back at school. I felt incredibly stressed at the amount of work that was waiting for me and...
felt completely lost during classroom instruction” (Interview, 2010). Discussion within the teacher focus group focused around not knowing what to expect from the student and that they did not wish to overwhelm the student. “I would adapt the work and just have the student do what they could. However, this strategy made it difficult to assess the student’s work and left major gaps in curriculum learned and knowledge of curriculum demonstrated” (Interview - Educator D).

There were also commonalities among all groups that feeling isolated from friends, due to prolonged absences, was a major implication. One parent from Focus Group (FG) I commented, “My child was devastated she could not go to school. Her social network at school meant everything to her” (Parent C). Another parent commented, “My child had difficulty making friends mainly due to other children’s parents being leery of having their children make friends with someone who may die” (FG I – Parent D). Different levels of maturity also play a role in social connection. A parent commented, “They mature so much more quickly but struggle to make a connection with their peers because of the maturity” (FG I – Parent B).

Prolonged absences effect on self-esteem.  All groups reported that CI students talked about being different than the other kids, for example, having no hair, having a limited amount of friends, and losing his/her identity. One parent commented, “My teenager felt that not getting to experience what others were experiencing was more of a letdown and that cancer was a secondary issue” (FG I – Parent B). Kate also commented on the academic obstacles she faced, “I realize now that my self-esteem was taking a beating, especially when I failed Grade 11. I was stressed over my schoolwork and how many obstacles I had to overcome. I missed my friends who had now graduated. I just did not feel like I belonged” (Interview – 2010). John’s parents and doctor reported that prior to his grade 7 year, John continually complained about the schoolwork being too hard, falling behind and not feeling connected to his classmates.

However, upon analysis, Group C data differed after the implementation of the technology support plan for John. John’s dad commented, “Though he was out of the classroom and away from school, he never felt fully removed from the class. Because of the technology, he was able to walk into the classroom more confidently” (Interview, 2009).

Collaboration – Home, School, Hospital
There was strong evidence across all groups that home-school collaboration appeared strong in theory but weak in practice. Only 1 of 12 parents interviewed reported having an extremely positive experience. “If my child missed school, all of his teachers would leave his work at the office for me to pick up on a daily basis and I would drop off any work completed. The teachers also made themselves available via email” (FG II – Parent C). Previous to Grade 7, John’s parents followed a similar system. John’s mom commented:

Sometimes, I would have to stay after school to have some concepts taught to me and then I would teach John. I left some of the harder concepts for the Hospital
Homebound teacher but it still took about an hour each day to teach John (Interview, 2010).

Overall, parents reported that when home-school collaboration worked, it was great, but when it didn’t, it became just another obstacle for the student and family. One parent commented, “At the beginning of the year, I wrote a letter to each of my daughter’s teachers and the principal, warning them of pending absences, due to ongoing dialysis. There was an initial meeting, but no follow-up” (FG II – Parent C).

Data from all groups showed the numerous amounts of external agencies that can be involved in the lives of CI students however, these various relationships struggled to work as a cohesive unit:

A lot of the collaborative support that I discovered was out there, I discovered through my own research. As well, when you found the support, it was so frustrating to complete all of the paperwork and emails to communicate with the agencies and between the agencies (FG – Educator B).

External agencies sometimes made recommendations to the students and parents without my knowledge and it was sometimes difficult to follow through (FG – Educator C).

As part of the Hospital school, I find that sometimes there is a challenge with communication between the classroom teacher, parents and the hospital school. Sometimes, it was a challenge of getting coursework material from the school that I could continue with in the hospital. At other times, the parents can be a challenge as they don’t want their child taking on too much, at which point the doctor would have to intervene. At other times, it just came down to teacher expertise in the hospital.

If a student came in to the hospital needing help with calculus, this could be a challenge” (FG – Educator E).

Triangulation of data revealed a different experience with home-school collaboration for Group C:

Home-School-Hospital collaboration was incredibly positive because all of John’s support network was on the same page. The biggest observation I made was that the support seemed incredibly proactive, rather than reactive, because all of the agencies, doctor, family and school continually communicated potential challenges before challenges emerged. Lessons were audibly recorded via iPod and the SEA would take still pictures of any notes from the board, scan any materials and email to John (Autoethnography, 2009).
The tech support agency provided John a Kurzweil keyboard that was able to download the scanned sheets via email. He could type directly on to the scanned copy and email it back. His teacher would then provide immediate feedback...During my time working with John, I observed that parent clarification on coursework actually reduced because Mom would listen/watch the lessons with John so that she also understood what was being required of him (Interview - SEA).

John’s mom commented, “Home-school collaboration improved using technology because it took the stress out of it, lessons were close to real-time and feedback was immediate (Interview, 2009).

Technology
A technology question was posed in each interview in order to gauge whether emerging Web 2.0 tools was being used within schools and what kind of impact they were having, if any, for CI students. Most interestingly, one teacher commented:

   I have used Skype once to link the cancer student to her own classroom and felt the potential was incredible. The problem is that hospital or district firewalls often interfere with these types of programs, so it is not always successful. However, when teachers have a website or allow assignments to be sent via email, that is extremely helpful (FG – Educator E).

There was also moderate evidence across all groups that technology was used within the classroom for academic support. For example, parent and teacher responses reported that technology such as Kurzweil keyboards and Alphasmart was being used within the classroom and one parent reported that her son’s teacher was taking photos of notes with an iPhone and uploading the pictures on to the class website. The parent that had positive home-school collaboration commented, “E-mail communications with teachers is a big support. Some teachers have web pages as well and that has become effective for obtaining homework” (FG II – Parent C). Kate, who had dropped out due to difficulty with staying caught up, commented, “My English 11 teacher allowed me to send in all of my assignments via email and I received 98% overall in the course (Interview, 2010). Sam, who was enrolled in a Distributed Learning school when this interview was conducted, also spoke positively about using technology to support her learning, but felt socially isolated:

   What I really like about (distributed learning) is that I can make my timetable to fit my needs. If I miss a day, I just reset the schedule and it readjusts my entire course schedule, assignment due dates and exam dates for me. The principal has been really supportive in accommodating me as well. I also like that I can take exams at home and I am able to work at home while ill or while in isolation during treatment. However, I really get frustrated with the amount of reading that is required.

   Most of the teachers use PowerPoint, which means I still have to figure out things on my own. I would rather hear lectures and be part of a classroom. I really miss discussion with other students (Interview, 2010).
Group C showed strong evidence of iPod technology not just supporting John academically, but also socially connecting him to his own classroom:

“I think the technology was huge because the audio/video support was almost in real time. I could post the material and mom could immediately download a lesson that same day. John could listen or watch the lesson online within an hour. He was doing the normal work of his peers (Interview - SEA).

I sat at the computer with John to watch the lesson so I could understand what was being taught and felt I could support him better. However, half the time he was able to do it on his own because he had the lesson on his computer screen. He could even watch or listen to it again if he was confused. It was an amazing difference for me and for him. It gave John independence (Interview – John’s Mom).

The technology link between school and home kept him connected on a daily basis. He did not have to get reacquainted with teachers, students or learning materials. It gave him independence and a sense of normalcy (Interview – John’s Dad).

Role of School
There was strong evidence across all groups that school gives CI students a purpose, a sense of normalcy, distraction from illness, long-term goals and a social connection. Comments focused around social connection, maintaining routine and focus, and providing long-term goals:

School gives my son purpose by providing him routine, but also distraction from cancer. The school expectations also help him feel like a normal child (FG I – Parent D).

School allows him to be part of a social family that is an important part of his life. School provides a positive distraction as long as there is effective communication set up between the school and home (FG II – Parent B).

In general, I would say that school provides a safe place for kids with chronic illness. When at school, they are away from their doctor, parents and pain. It is their chance to experience normalcy. I think most kids appreciate the school work in order to feel they are doing what other kids are doing and to keep busy. I believe that most kids with chronic illness don’t see themselves as different and don’t want to be treated differently. It is adults that want to treat them different. School facilitates them being treated as equals and most kids feel that is important to maintain. Social networks are vital to all children, especially those with a chronic illness (Interview – John’s doctor).

Teacher discussion also focused on purpose and the challenge of providing normalcy. One teacher commented, “Chronically ill students want to be normal and they want to have a
break from being sick. School provides a healthy distraction from their illness” (FG – Educator F). Another teacher expanded on the preceding comment, stating:

But their school experience has to be real inclusiveness with true support. In order to make school more positive for these children, there should be an IEP that considers parent and student needs, has clear and effective communication avenues amongst all parties involved, where each person has a clearly defined role, and the plan has to be flexible to the present needs of the child and the classroom. There needs to be ongoing consultation to make it a positive experience” (FG – Educator B).

DISCUSSIONS AND IMPLICATIONS
Findings
The findings of this study reveal that to provide both academic and social support, Mobile technology can be used as a tool to provide an asynchronous communication link between the student’s own school and home. The iPod allowed John to receive direct instruction which had a direct effect on minimizing learning gaps and allowed the student to keep pace with the curriculum. It also enhanced home to school collaboration and allowed the student to learn independently instead of feeling dependent on others. Moreover, this communicative tool provided social support for the student by allowing John to hear the voices of his teacher and classmates and allowed him to work collaboratively with others to fulfill jobs within team projects. Most importantly, the iPod allowed the student to walk into the classroom confidently, after long absences, because he was not lost in the curriculum and because he had ongoing social contact with his peers.

Links to the Research and Policy Implications
This study’s findings corroborate the research in the literature review that prolonged and intermittent absences create more challenges for CI students. In particular, CI students face academic and social challenges that create anxiety, including catching up on missed work and learning gaps due to lack of direct teacher instruction. As well, findings demonstrate that CI students can face the challenges of disrupted or dissolved friendships due to prolonged absences or academic failure. iPod Technology can be used as a communicative tool to provide academic and social support for CI students and open up a “window into the classroom and provide opportunities to communicate with their teachers and peers. It provides another way of minimizing the impact prolonged absences from school has on their learning” (Wilkie, 2010, p. 11).

As a result of this study’s findings, there are three clear recommendations that emerge, including school district and education policy changes that support the learning of CI students facing prolonged or intermittent absences:

Merging of key educational documents that support the learning of CI students. This study’s findings expose communication challenges between home, school and hospital. The findings suggest that CI students and their teachers have a range of health related support
needs but that provision of support is inconsistent and teachers seem significantly challenged how to best support their educational needs. For teachers to effectively support CI students, clear guidelines and responsibilities are required. An analysis of the British Columbia Ministry of Education chronic health policy shows that guidelines are spread between two documents. The document, *A Manual of Policies, Procedures and Guidelines* (2010) states that:

> disabilities and chronic health impairments and providing a program in which they can be successful, provided that specialist support is available when needed. In-service training opportunities and a collaborative team approach are recommended to support and encourage the development of the skills required (p.69).

Yet the policy does not offer clear guidelines for how teachers can effectively support the learning needs of the child, regardless of absence. However, the second document called *Awareness of Students with Diverse Learning Needs: What the teacher needs to know – Volume 2* (1998) offers clear support avenues and communication strategies for students who “may have frequent absences from school and periodic hospitalizations” (p. 10). In particular, it addresses teacher support that “helps the child to cope and reach their full potential” (p.10) by:

- Meeting with the parents, the student and medical professionals to determine how best to meet the individual’s needs.
- Obtaining information on the type of cancer; the type of treatment, including the side effects; and the schedule of treatments and tests that require absences.
- Recognizing that students may have gaps in their knowledge of certain subjects as a result of absences due to illness and treatment.
- Considering the use of audio-homebound or audio-visual hook-up as a method of instruction so that the student can attend class at home.

Merging the policy manual and the teacher resource guide in order to provide more explicit direction to support the needs of CI students and the numerous proactive strategies that can be used by teachers could strengthen policy guidance. Furthermore, the resource guide could be updated to advise school districts and educators of the various types of asynchronous communication apps that could be used to support audio-homebound or audio-visual instruction.

*Update CI Policy Manual to include recommendation of District Technology Helping Teacher to support teachers, SEA’s, CI students and families.* This study recommends that policy be updated to expand support programs that use asynchronous technology tools to not only provide inclusive education for CI students, but a direct link to their own school and classroom when absent from school. While teacher experience with technology is increasing, supporting a child’s learning at home can be challenging without proper technology parameters. Therefore, policy change should include recommending District Technology Helping Teacher’s support that provides on-going professional development for not only teachers and SEA’s, but also provides technology liaison support between the
school, home and hospital. In addition, the policy manual should recommend the Helping Teacher is part of the initial planning meeting.

*Update policy to provide ‘umbrella support’ by a social worker.* As mentioned previously, parents expressed frustration with communication between home, hospital and school. While families are provided assistance with a Hospital Social Worker to support needs, including education needs while the child is in hospital, this study recommends expanding the Social Worker’s role to provide ‘umbrella support’ that ensures communication between home, hospital and schools, since research shows that CI students are spending less time in hospitals.

*School administration providing staff ample time to create a proactive learning support plan.* The findings revealed by John’s group suggest that John’s support plan worked well because ample time was given to prepare a plan. School administrators could support teachers by providing planning time so that the child’s next grade teacher can meet with the integration teacher, parents, principal and the various agencies involved with the child, in the spring, so together they can create a clear support plan for the child, well in advance.

**Caveats**
As mentioned previously in the section on limitations, this support program was only used once and the teacher had the support of a SEA. Although this study has shown the positive impact that iPod technology has on supporting chronically ill students, additional study should be done to see whether a similar program would be successful using a larger sample of participants and in order to see whether a similar program would be successful without the assistance of a special education assistant.

**References**


BIOGRAFICAL NOTE:

David A’Bear has a M.Ed. in Educational Leadership from Simon Fraser University. He is currently an elementary Vice-Principal for the Surrey School District in British Columbia. Having taught both Primary and Intermediate grades, his main area of interest is how to effectively integrate technology into the classroom to support all types of learners.

Appendix A – Sample of Participant Permission form

Dear Participant:

During the 2008/09 school year, I had the pleasure of teaching a student with life-threatening cancer, who has since passed away, at the Grade 7 level. Due to his illness, it was extremely difficult for this student to attend school on a regular basis. In order to help this student succeed, a plan was devised that would help this student complete school wherever he was. The student’s lessons were recorded in video and audio, photos were taken of whiteboard lessons and a device that connected with the student’s iPod helped provide lessons audibly and visibly. Despite many challenges, this student, using the tools provided, met all but one of the learning expectations for his grade and achieved all A's and B's in the process. The student’s long battle with cancer left a legacy for many, but the technological tools that were used have also inspired many new avenues for children with chronic illness to learn and succeed.

I am writing this letter to ask for your assistance in helping me gather research for my Master’s level Action Research project entitled, “What can school districts do to support children with chronic illness, such as cancer?” Action Research is inquiry-based research that typically is designed and conducted by teacher practitioners who analyze the data/research to improve their own practice. It also benefits other teachers in many districts that may face a similar experience in the future.

I would like to use the information you provided me during our discussion on your experience with chronically ill students. You will remain completely anonymous but your answers will help develop recommendations for future teacher practice. The information will be used once all ethics approval has been given. If you approve of the information you provided being used, could you please give consent in the space provided below?

Sincerely,

Author
Organization

I __________________________ give permission for the author to use the information provided to him by me for Action Research purposes.
Appendix B - Questions asked of participants in various groups

Parents
1. What challenges did your child face at school due to chronic illness?
2. How did long absences from school, due to illness, affect your child and his/her self-esteem?
3. What collaborative support did your school provide?
4. Describe home-school collaboration.
5. Were any types of technology used to support your child’s learning during long-term absences?

Chronically ill students
1. What challenges have you faced at school due to cancer?
2. How did long absences from school, due to ongoing treatment affect you and your self-esteem?
3. What collaborative support does the school provide?
4. What are the advantages and disadvantages of being a student of Surrey Connect with chronic illness?
5. What forms of technology do you use to stay connected to school?

Teachers
1. What challenges were you faced with while working with your chronically ill student?
2. How did long absences affect your progress with the student?
3. Based on your observations, how did long absences affect the student?
4. What kind of district support was given to assist your student and help him/her succeed?
5. What kind of technology was used to support the student?
6. What changes would you recommend for district support of chronically ill students?

John’s Parents, Teacher, Special Education Assistant
1. What challenges did John face at school due to cancer?
2. How did long absences from school, due to ongoing treatment and illness, affect your child and his self-esteem?
3. What collaborative support did John’s school provide?
4. Describe home-school collaboration to support John.
5. How did iPod and Web 2.0 technology support John’s learning?

John’s Doctor
1. Did John talk about school during treatment?
2. Did he talk about the challenges he faced regarding school while under your care?
3. Did you see John having to address any specific challenges or issues regarding his education while in care?
4. Did John’s efforts to remain engaged with school interact with/affect his medical care or treatment?
5. If so, did this affect his attitude toward school?