

**LAPTOPS IN BLUE JEANS: STUDENT PERCEPTIONS OF CONNECTING
WITH FULL-TIME TECHNOLOGY**

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Dedication

To my family, who live through the chaos I continue to cause – Kyley and Kent,
may you always do what you love.

Abstract

The purpose of this project was to determine student perceptions of changes in learning and living caused by full-time (24/7) access to laptop technology. The ubiquitous nature of laptops changes the accessibility of technology for students. The project intended to reveal the changes in daily routines, effect on school work by the participants, their attitudes and their views of the benefits and disadvantages of access. Livingstone Range School Division (Southern Alberta, Canada) participated in a pilot project involving the use of laptops by Junior High School students (in grades 6, 7 and 8) in two small rural schools. The students accessed wireless computers over a two-and-a-half year time frame on a 24/7 basis starting in the winter of 2002. The need for this study became apparent in the development of the Learning Anywhere Program to Optimize Pupil Success (L.A.P.T.O.P.S.) created in Livingstone Range School Division. My role as Director of Technology Services implied monitoring of the project from a technical perspective and my passion for Information and Communications Technology (ICT) integration promoted an educational perspective. The program had many successes and failures and the perceptions of students needed to be articulated.

An interview process was used to determine student perceptions of the program. These interviews were open-ended and patterns of response displayed themselves in the multiple conversations. From these patterns an online survey was constructed to generate data that summarized student perceptions. The results of the project indicate that students believe their work is improved by laptops but not necessarily their grades. Students want technology to work, they want it to be easily cared for and maintained. Students also want technology that is easily portable and does not increase the packing of materials

between school and home. The students also want opportunities to use the technology more often and are pleading for more teachers to meet the challenge.

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Introduction

Sometimes in our work and in our life opportunity blows in like a storm. It strikes you unaware and unprepared and anything that isn't tied down is given to the wind. There are choices to be made while the wind is blowing. One of them is doing nothing, just watching, not acting, not grasping on, and going for the ride. The other is to run and try to rescue all the items that are flapping in the breeze and attempt to put everything back how it was. And then there's one other alternative – to embrace the chaos and make the very best of the situation. The outcomes at the end of the storm can only be determined once the calmness occurs, and even then, not all of the outcomes will be revealed immediately.

I have always chosen to ride the storm. It's what living is about – embracing the unknown, challenging who I am and making the best of what is presented. The process doesn't always work out the way I had hoped or intended, but often, given time, things work out far beyond what I could ever have imagined. Regardless of the failures or successes, there is always learning, growth and enrichment, and a sense of moving forward.

Livingstone Range School Division was presented a storm to ride in the form of the L.A.P.T.O.P.S. project. L.A.P.T.O.P.S. stands for Learning Anywhere Program To Optimize Pupil Success. Students in grades 7, 8 and 9 at two schools within Livingstone Range School Division received laptops in the spring of 2002. The laptops connect wirelessly to the local area network and the Internet, have a 10 GB hard drive, a 100 mbps NIC card and come with Windows 2000 and Microsoft Office XP installed. Other software includes Internet Explorer, Geometer's Sketch Pad and Instant Messenger. Now, as students have constant access to laptop technology that is able to connect to

multiple networks in multiple ways, the way they learn is changing. Some of these changes are obvious and others are not.

The project came into existence on a gale-force-wind. It swirled into my office as a part of my role as Director, Technology Services for Livingstone Range School Division. Vendors knocked on our door with a philanthropic donation that was eye-popping. The opportunity was too good to pass up and so the project moved ahead in planned chaos. The timing, planning, and implementation occurred at a break-neck speed without comprehensive, sequential guidelines in place.

On a winter's day in the recent past, the outside air was crisp and the silence created by the thick muffling blanket of snow was surreal. There were drifts piled up on the sides of the roads throughout the small cowboy town of Lundbreck, nestled in the majestic mountains of southwestern Alberta. On the evening of March 7th, 2002, Livingstone School's brightly lit hallways led to a packed gym. Every grade 7, 8 and 9 student had cajoled, dragged or raced their parents to the school's gymnasium. This was the third attempt to brave the highway-closing winter conditions and initiate the students into the world of laptop technology.

In early 2001 conversations between the superintendent of schools for Livingstone Range and a national vendor representative created the start to the L.A.P.T.O.P.S. project. The vendor was in a position to offer a substantial philanthropic contribution, but the budget year meant the proposal would have to be acted upon immediately. Consequently, a conference call was leveraged to maximize the limits of the philanthropy to an amount that could not be turned down and the breeze picked up to a hurricane.

The purposes of this study are two-fold. It will provide insight into the overall L.A.P.T.O.P.S. program as it grew and developed. The successes and failures will be outlined. The second part of this project is to provide insight into student perceptions of the L.A.P.T.O.P.S. program and its effect on the lives of the students involved. This context will provide the framework of study.

Background of L.A.P.T.O.P.S. Program

The initial presentation of the laptops for students in Livingstone Range School Division occurred after a series of winter storms. Students were wired, as they expected the session to happen a week earlier but the weather dictated the occurrence. Arriving at the school, with snow steeply banked against the sides of the street, and a haze of automobile exhaust shrouding the street lights, it was obvious from the incessant murmur that the students were more than a little excited about the prospect of receiving the laptop computers.

The gym was crowded with almost every parent and child from grades 7, 8 and 9 filling the space that was available. Dignitaries from the local area as well as school board trustees and staff members added to the edge of adrenalin that was seeping from the students vibrating in place. There were the usual speeches and some instruction about the tool, but it was soon obvious by the kids percolating like popcorn on the verge of popping that anything they heard had passed through unchecked.

The initial reaction as the students received the laptops was as expected. The student enrolment in the two schools is shown below.

Grade	Granum School			Livingstone School		
	2001	2002	2003	2001	2002	2003
Seven	16	26	21	14	23	16
Eight	20	17	26	22	15	17
Nine	10	17	11	10	23	14

Table 1, School Enrolment

During the first year of the study, the smiles and wonder and shared enthusiasm was overwhelming. There were a lot of questions and a lot of excitement. The students were able to take the laptops home that night and recharge the batteries in preparation for the next day. The weeks that followed allowed the students to reflect on their introduction to the systems. Students created a written response in their language classes. The initial response was overwhelmingly positive and their thoughts are captured below. The names used are pseudonyms and the text is verbatim with editing completed for clarification only.

When I first heard about student laptops coming to Livingstone School, boy I was excited. I wondered what it would be like, if the teachers would work us harder or easier, what would it be like? I made myself look onto the future in my brain and it was telling me that this was part of my lifetime. After mom had gotten her teacher laptop I was getting jumpy. I wanted my laptop so bad, it seemed like I've already got it and I was bragging. I've played on her laptop so many times; she couldn't get any school work done. I couldn't wait another meeting!

When the day came, I wished it would end. Finally, March 7th 2002, there was a laptop meeting in the gym. First of all Mr. White, the school principal, introduced us to a few people. Mr. Black, the technical computer man, told us about Net Schools, the program that got us into this. Then Ms. Green, our Jr./High School math teacher, explained Net Schools to us and the parents. There was only five minutes left, I couldn't wait any longer. After the five minutes all of us bolted towards Mrs. Blue,

the Jr. High school French teacher. When I gave her the money and she signed the sheet I finally got MY laptop. Yippee!! I was so happy. My friends and I opened it (the laptop) at the same time and tried to log on. But when I tried it wouldn't let me. I tried several times and by now I was getting frustrated, but then Mr. Yellow, the computer technician, helped us. I was feeling better by now.

We finally got our laptops and they were really fun to play and work on. But then after a few days I wasn't having fun changing the batteries and charging them every day. That was starting to be a pain, but other than that, it was fun. I was thinking that now we didn't have to pack books around to and from every class. But at school there wasn't much change. We still had to pack books and binders around as well as the laptop. It was fun using them at school, you don't have to write as much as you did without the laptops. Also I thought what was cool was you could use the internet without hooking up any connections in the high school end. It is really fun and exciting. I'm really glad we have these. (Karli – Gr. 7)

I entered the school with butterflies of excitement. I couldn't contain my wonderment any longer.... The moment it (the laptop) was in my hands I opened it up and turned it on. I eventually got onto the desktop and was checking everything out. The next day we would get connected onto the internet but once again, another obstacle! It was -35 degrees (Celsius) at my house when I woke up! The busses weren't running again, but I had to

go to school to learn about my laptop! For once I actually wanted to go to school!

Now I know how to connect to and use the internet and am well on my way to having three month's use of a laptop! If only I could still use it next year... (Amanda – Gr. 9)

“Laptops, the coolest thing in the world,” I thought at first before I got my laptop. “Our school is revolutionizing the schools of the future and everyone is a part of it. These laptops they're going to be the best laptops that Mr. Black can come up with. This is going to be the greatest thing ever.” I then thought about the viruses and how much we're opening up ourselves to stalkers, prowlers and other bad things. What about all the responsibility of the equipment involved? Boy, this is going to be a hard and scary ride. Then we found out that there wasn't going to be any disc drives or downloading of music or movies so that was disappointing. So I thought that it wasn't going to be bad but without downloading it wasn't going to be too much fun...

...We have been doing neat things with the laptops and they're really helping us out with school...this has been a great learning experience already. I can't wait for what else there is in store for us.

(Brienne – Gr. 8)

The teachers have been asking us about what we think about this laptop project and I think it's a great idea because it opens a whole new world of technology to me and I'm sure it does the same thing to other kids. The

best thing I like about the laptops is that our parents are able to use them also. (Kale – Gr. 7)

Following the laptop distribution the ongoing use exposed many of the limitations and frustrations associated with the use of fragile technology. The technicians at the school division office saw the machines as a constant source of frustration. The laptops were time-consuming to repair and the issues surrounding collecting, recording the incident, shipping for repair and returning the machines to the students were numerous. The work of supporting the program led to a tainted view of the benefits of one-to-one technology by students. That view changed because as the students were interviewed and surveyed they shared the many positive aspects of integrating laptop technology in their day.

Along with the student growth that occurred, each staff member, including the principal, was involved in multiple emergent professional development activities. These included everything from keyboarding to use of the teacher laptops to discussion on improving student use. Teachers were involved in sessions surrounding the use of the software on the systems, but little was offered in the way of shifting practise.

Students involved in the program worked with the mobility in many different ways – in hallways, around lunch counters, on their beds at home, in front of the television. These activities were not articulated by the students as they responded to the interviews or the surveys.

As year one ended, the original wearable laptop cases were exchanged for backpacks. The backpacks were thought to be much more protective of the machines but the backpacks did not fit in student lockers, so they were not well received.

Frustrations occurred when students found the machines over-heating and shutting down. This was further complicated by a number of systems with battery and power supply failures. The repair turn-around created further issues and there were times when students without laptops outnumbered those that had them. This information was relayed to the technical support team whose job focused on resolution of these technical issues.

Classroom teachers expressed frustration of having to plan for too many variables. As students were expected to come to class with working laptops, lesson plans were created to support that process. When numerous students showed up without laptops, teachers were forced to modify lesson plans or attempt to gain access to the computer labs.

This is not to suggest that there were not successes. Student work was displayed in multiple venues including public gatherings and class presentations. The comments from teachers indicated students were able to perform complex tasks on their systems.

As the program begins its final pilot year, Livingstone School has elected to provide the laptops to their grade 11 and 12 students. Granum School continues to use the systems with their Division III (grades 7, 8 and 9) students and is actively seeking ways to continue the program by finding funding from outside sources.

Design of the Study

A part of my work as Director of Technology Services, includes the ongoing evaluation of programs related to the integration of technology. The opportunity to reflect on the project and the attachment that it has to my daily work requires thought. To that end, this study drew on the resources offered from the technology services department.

The time and effort contributed to the L.A.P.T.O.P.S. project meant changing how the entire technology support team completed their work. I am a part of that team and certainly felt the effects of the participation in this project. Included in the research on student perceptions are reflections based on my observations of student use, input from technicians and discussions between staff members. Anecdotal and reflective commentary is included to support those observations. In order to gather student data, two methods were used – interviews and online surveys.

Initially, select students were gathered together at the two sites. I had asked the administrator and technology team of both sites for access to the students in groups of three from each grade level, for a total of nine students. Livingstone School in Lundbreck complied exactly. The interview process took approximately 45 minutes per group. The students were interviewed in an open fashion with some questions that were developed based on conversations with administrators and teachers (see page 17). The questions were meant to lead students to reflect on their use of the laptops and their effects on living and learning. Students were to be interviewed in three groups of three. The students were grouped by grade level – three from each of the grades 7, 8 and 9. Each of the grade levels had students that felt the program added and impacted their learning and living in a positive way, had little change on them, or had a negative impact.

The students' interviews were video taped. This process was successful at Livingstone School in Lundbreck, but substantially different in Granum School in Granum. Granum students were interviewed during a very busy time at the school and it was impossible to group them to interview according to grade level. The multi-aged classrooms meant that scheduling students to be interviewed in the same manner as

Livingstone School was impossible. The constraints of my job required rescheduling interviews to a later date that was filled with conflicts for students. As a result, the interview process meant that Granum students were interviewed in a large group and a greater amount of discussion was encouraged. Students joined and left the interviews according to schedules related to their day. In the end, five grade 7 students were interviewed and were later joined by two grade 8 students and then two grade 9 students.

The taped interviews were reviewed and salient themes were used to create questions and construct an online survey (see Appendix A). The online survey was completed by six grade 7 students, eight grade 8 students and six grade 9 students from Granum School. Livingstone School's surveys were completed by eighteen grade 7 students, sixteen grade 8 students and fifteen grade 9 students.

The surveys generated both quantitative and qualitative data. Using the Likert scale allowed the quantitative data to be easily charted for analysis. The qualitative data required extensive review and an interpretation of themes. The charts were interpreted to gain insight into both student bodies perception. Deviations on the quantitative charts led to a review of the qualitative data from the interviews and written responses to determine possible reasons for the incongruities. The qualitative responses revealed a fair amount of commonalities in the student answers.

The qualitative data substantiated the findings generated by the quantitative data. The importance of the student voice became obvious when analyzing the quantitative data. Both sets of data were required to provide a clear picture of how students felt, both positively and negatively, about the program.

Review of Literature

Laptop technology remains in its infancy in the school arena. There are few schools that are using laptops, fewer still that use laptops on a 24/7 basis. The unique opportunity presented to the students in the two schools within Livingstone Range School Division suggests many lessons are yet to be learned. The available literature does not address student perceptions of the changes caused by laptop use as a focus of its data.

The themes within the readings focus strongly on these specific themes: use of technology in schools, impact on teaching, impact on learning, end-user beliefs about technology.

In terms of technology use in schools, Canada ranks among the highest for OECD countries with 88% of 15-year-olds having home access to computers (Statistics Canada, 2000). Further the average computers- to-student ratio for 15-year-old Canadians is 1:6. In spite of this, teachers are not changing practise. A Euroa Secondary College investigation (2000) finds that personal use of computers has increased but the integration of technology in the classroom showed no statistical difference even after a two year time frame. The research group Rockman Et Al (2000) determined students are using the systems currently in schools across the United States, but the primary usage continues to be for research and word-processing. Dramatic changes to pedagogical practise to use technology to enhance classroom learning are limited.

There is a growing list of opponents to the use of technology in schools. These opponents argue around the return on investment as it applies to educational outcomes. Cordes and Miller (2000) summarize these thoughts and use the metaphor of “fool’s gold” to paint a picture of what technology is in schools. Their arguments range from the

negative physical and psychological effects of using technology on young children to the abuse of spending funds better served elsewhere.

Within the same article they quote John Dewey, and the loves that single out great teachers – love of others, love of being with children, love of knowledge, love of communicating knowledge, love of a particular subject that one has an aptitude for, love of arousing in others similar intellectual interests, a love of thinking, and the ability to inspire in others their own love for learning itself.

In an article determined to point out the shortfalls of the use of technology in schools, the contradictions that arise with the authors' arguments are most obviously pointed out in Dewey's loves. Technology is a conduit to access knowledge, communicate knowledge, share intellectual ideas and stimulate and inspire others' love of learning. Excellence in teaching and learning can be amplified by technology.

“Educational technologies” is a relevant term used now to describe the use of computers in schools. Technology has always been a part of the educational process but the tools have changed or evolved over the years. Pea (1998) determined that we've been using technology to support past practise rather than modifying our work to keep up with the changes brought on by technology. The flexibility of technology allows them to support any mode of classroom instruction including those that are now outdated. Pea calls for extensive work in the area of teacher development to meet the engagement in learning created by technology. He goes further to suggest that opportunity will present itself in the form of the major teacher turnover about to happen.

Jacobsen (2001) provides reasons why the change is needed and points strongly to the fact that controlling content is out of the hands of teachers and the educational

structure. The change in the format and access to information requires teachers to adapt their skill set to something much different than they were taught and more importantly, than they are currently using to teach.

Observations in my role with the school division indicate the majority of teachers haven't caught up to using word-processing in meaningful ways. Now, Video Conferencing, Voice Over IP, and Online Professional Learning Communities appear on the landscape. Software applications that allow students to complete video work with inexpensive web cams and online software have changed how students present their work. The body of adults involved in education is still sliding through the implementation dip. Teachers are bound to past practise because, once in their classrooms, they are in a silo. My observation showed that some teachers within the same schools don't even share common materials. The increased use of technology suggests educators' need for communities of practise – but how can that be fostered within a school building? Deal and Peterson (1999) state principals are the gatekeepers of their buildings and their leadership determines the culture of the school. Their leadership is required especially since some teachers are faced with still being in the implementation dip of word-processing while new innovations appear each day. They are unable to get out of one dip before they slide into another and use that fear to block change.

Then, there are the students – students who are unafraid of technology – students who use technology like they use a light switch, unconsciously reaching for the light that will illuminate them. Students' daily use of technology includes word-processing, but they have long since climbed that implementation dip. Students seem to be able to shirk off the implications of innovation and attack the next challenge unconsciously.

In an argument supporting budgets for technology, Harper (2004) states end users of the technology, our students, are in a position where they have a knowledge base that is greater than their teachers. He provides insight that students are better equipped to deal with problems as they arise, are willing to take risks and can support each other. Beyond that, he provides examples of staff development programs where students are teaching the teachers. In many cases students are not being provided the opportunity to leverage these skills. The issues generated by the disengaged student point to an erosion of the number of possible graduates.

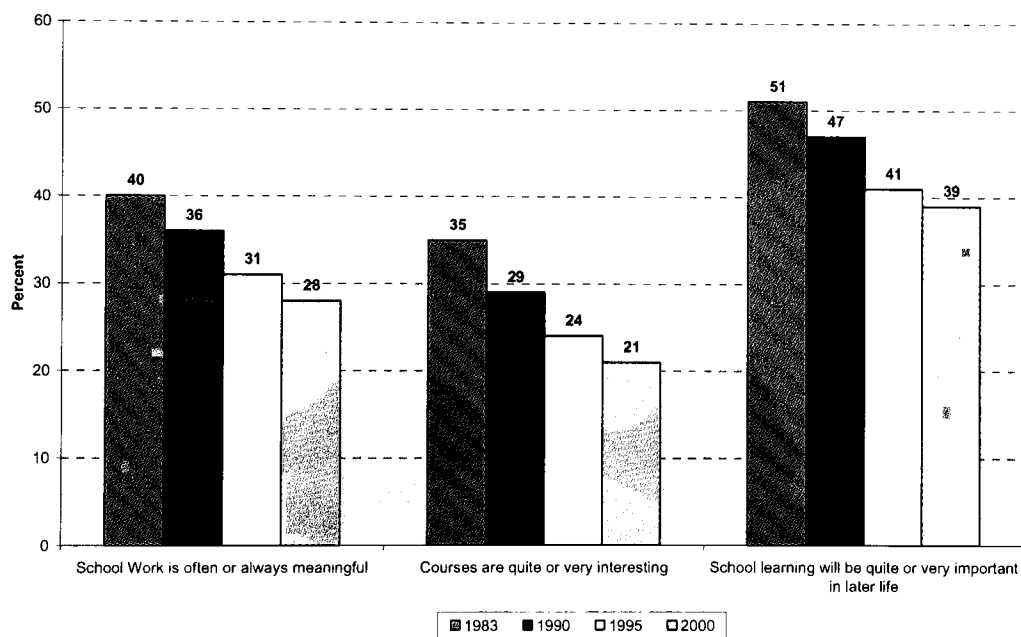


Figure 1. Students' View of School

In a publication by the National Centre for Education Statistics (2002), a frightening statistic was revealed showing how students are disillusioned with the benefit of school and disengaging from the process (see Figure 1).

The technology proficiency that our students have has them almost single-mindedly requesting to be “let go.” They have the ability already to exchange the information between them and leverage their own use of technology. They adapt easily to new situations and can problem solve technical issues. Maers and Friesen (2001) had students exclaim that they know what to do and only need teachers to allow it to happen. This sentiment was echoed by Gardner, Morrison, Jarman, Reilly, and McNally (2001) as the students studied wished the systems could be used more often and in more interesting ways.

This study hopes to provide much needed data to fill the gap in the existing literature specifically concerning the perceptions of students using laptops.

Research Methodology

Interview Design

The students involved in this study were typical energetic junior high school students. The laptops that returned to school each day ranged from pristinely cared for business machines to peanut butter and jam encrusted, banged up, abused toys. Some of the screens could be barely recognized for the fingerprints while others did not even have a piece of lint adhering to their polished surfaces.

Attempting to stand again in the worn shoes of a junior high student and look through their eyes is a near impossible task. Life's lessons have reshaped the flow of hormones and endorphins and the river of other chemicals that are one difference between the thought and emotion in an early adolescent and a middle aged researcher.

Instead of trying to relive my teens, and guess the types of questions the kids would have, I took examples from what teachers and administrators were noticing as students used the systems. One principal commented that he couldn't believe how well the students knew the software and that they knew way more about computers than he did. I then used those types of prompts to get students talking. My hope was that the conversation would become spontaneous, and the students would direct where it went.

The technology team and administrator selected students based on their knowledge of students that fit three categories – students that embraced the laptops program, students that used the laptop but did not get overly excited about it, and students that were frustrated by the program.

The interview process was set up to determine the survey questions necessary to get a true perspective from students about the laptops program.

The two sites, Livingstone and Granum, had very different approaches and support for the technology and it showed in the responses to the questions. The prompts for the questions included items like “Your teachers say you are better at using a computer than they are. Tell me what you think about that.” Another example is “Viruses have infected some of the systems and caused problems. What problems have you experienced?”

Overall the Granum students used their laptops a lot more and were able to learn a large number of technology skills. They were familiar with a greater number of applications and seemed to have a better understanding of networks and computer functionality.

Ultimately, there were patterns in the answers provided by the students. The students at both schools were engaged in the interviews. They had a strong voice and ensuring that each student had an opportunity to speak was difficult to do. After completing the series of interviews, the tapes were reviewed and patterns of response were established. The results were used to create an online survey to be completed by the students.

The intent of the interviews was to get students to focus on what their thoughts of the L.A.P.T.O.P.S. program were and therefore guide the creation of the survey tool.

Notes were taken while the students were interviewed and the recordings were reviewed to extract patterns of salient responses that led to the survey questions.

Interview Results

As students were interviewed their reflections were videotaped. The intent of the interviews was to generate questions for the surveys. The themes the students chose included the physical issues with the storage of the machines as well as the equipment failure that was experienced. Some of the conversations focused on abuse – inappropriate websites and gaming.

What was remarkable was that none of the students talked about how the portability of the technology affected them in the classroom. Even when pressed to discuss this phenomenon, the students pressed past it to other questions. As an observer, I saw the students working in hallways, and corridors, outside at picnic tables and in the gymnasium on the stage. None of them suggested the differences that seemed so obvious regarding the use of the laptops in a portable environment. It was like a fish not knowing it is in water.

The other interesting points came from those students struggling with class work previous to participating in the laptop program. These students were the champions of the cause and expressed deeply how the use of the systems helped them with organization, and completion of assignments.

As a result of the interviews, six themes emerged: changes in routine, technology safety and use, impact on school work and processes, communication between home and school, teacher involvement, and hardware issues.

The differences in responses between students were informative. As they discussed their use of laptops, some of the students suggested they would be happier

without them whereas others remarked they couldn't see doing as well if the laptop was not available.

Survey Design

The survey was designed to create data that matched the focus of comments generated by students in the face-to-face interviews. Since all students had access to laptops or other internet-connected systems, the survey was created in a web-based format (see Appendix A). Students involved in the L.A.P.T.O.P.S. program were experienced internet users and were able to successfully complete the form presented. Many had completed online surveys before and found the process simple.

The intent of the survey was to establish an opportunity for students to voice their thoughts, criticisms and praises of the L.A.P.T.O.P.S. program. In the previous interviews I used open-ended prompts as needed to engage the students to speak, but allowed the conversation to evolve from student input. Many of the questions were open-ended. This unstructured interview process created an opportunity for students to veer off in directions they personally felt were important. The survey questions were developed based on this process.

The first section of the survey, Demographics (see Appendix A), provided information on the grade level and school the student was enrolled in. The students had different environments for this program. In one school, the students were in a multi-aged classroom with all three grades, 7, 8 and 9, combined in one room. These students were the oldest group in this K-9 site. In the other school, the classes were separated by grade, and the site was a K-12 school.

The second section, Questions 1-3 (see Appendix A) of the survey, focused on perceptions changes in daily routine and learning changes resulting from having a laptop. The laptops meant creating a routine for students like taking them back and forth and

recharging batteries. It was hoped that this section would allow students to express the positives and negatives of dealing with using a piece of equipment that required daily care and maintenance. The process that students used to manage information also changed. Storing notes, collecting information and turning in assignments all changed with the implementation of the program.

Ethics and values comprised the next section, Question 4 (see Appendix A). Students were asked to reflect on the dangers of laptop use. During the interview process more than one student discussed pornography and another one discussed stalkers. Other students described changes in their daily routine concerning exercise. The question presented allowed an opportunity to evaluate these concerns. According to Cordes and Miller (2001) the opponents of technology use in schools focus a lot on these areas.

The next section, Questions 5-7 (see Appendix A), focused primarily on academic achievement, including validating research that suggests students spend more time on school work because of technology and that grades can improve.

The next focus, Questions 8 and 9 (see Appendix A), was the role laptop technology played in the communication between the student, the school and the parents. When the program first started, web-based tools were in place that provided calendars, student and parent accounts that would allow e-mail access to teachers, observation of digitized student work and grades. Bandwidth reduced the ability to use this tool properly and it was soon dropped. The laptops went home with the students and parents could access student assignments if they chose to. This section determined if students felt more engagement from their parents because of the laptop systems.

The next section, Questions 10-13 (see Appendix A), attempted to get students to discuss changes in the teaching methods without trying to evaluate them. Technology use in schools implies collaborative and project-based learning as the best avenue for its integration. The questions allowed students to reflect on the type of work they completed.

Finally, two open-ended Questions, 14 and 15 (see Appendix A), were provided to allow students to expand on their thoughts. The same question was asked in two different ways, hoping students would feel able to fully express the negatives and the positives and things they would change to improve the L.A.P.T.O.P.S. program.

Students completed the survey online under supervision of a teacher on site. The survey length was kept manageable in line with the age of the audience.

The data were collected into an online database. Written text was separated from numerical data. The numerical data were analyzed and charted using a spreadsheet. Questions requiring a scaled response used a Likert scale with 1=Strongly Disagree and 5=Strongly Disagree. My analysis and interpretation of the written responses will follow the statistical analysis of the numerical data.

Survey Administration

The survey administration was completed in partnership with colleagues on site. Staff were asked to review the survey with their students, clarifying vocabulary if necessary. The surveys were completed by students on laptops or in a computer lab connected to the internet and supervised by their teacher. Surveys were typically completed within one-half hour.

Students commented that they did not understand the wording of some of the questions and struggled with what the term “perceptions” meant. Students were able to understand the Likert scale as reported by the teacher.

Using an online database meant that no paper had to exchange hands although there was some concern that student input would be reliably saved as internet connectivity has been unreliable at both sites on some days. The analysis of the data was completed quickly as no data had to be entered and the error of incorrect re-entry was eliminated.

It was interesting to note that spelling and grammar errors existed in many of the student written responses. Student responses were left as submitted with minor editing for clarification. Some further conversation about how students enter data into online forms compared to submitted work for the classroom is warranted.

Survey Results

The following graphs were generated using the numerical data from the online surveys. The following topics are addressed: student grade level, the increased amount of time spent on school work because of laptop access, the increase in the data created each day, improvement in grades, improvement in communication with parents and improved sharing of work with parents.

In addition to the numerical representations, the written responses by the students were analyzed and interpreted. The student responses creates more questions and is compelling and informative. All written responses are included in Appendix B.

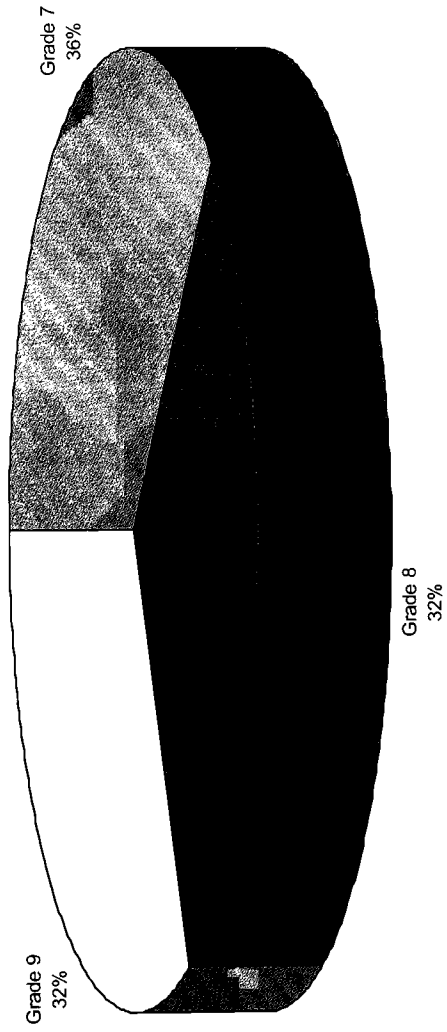


Figure 2. Grade Level of Students Involved

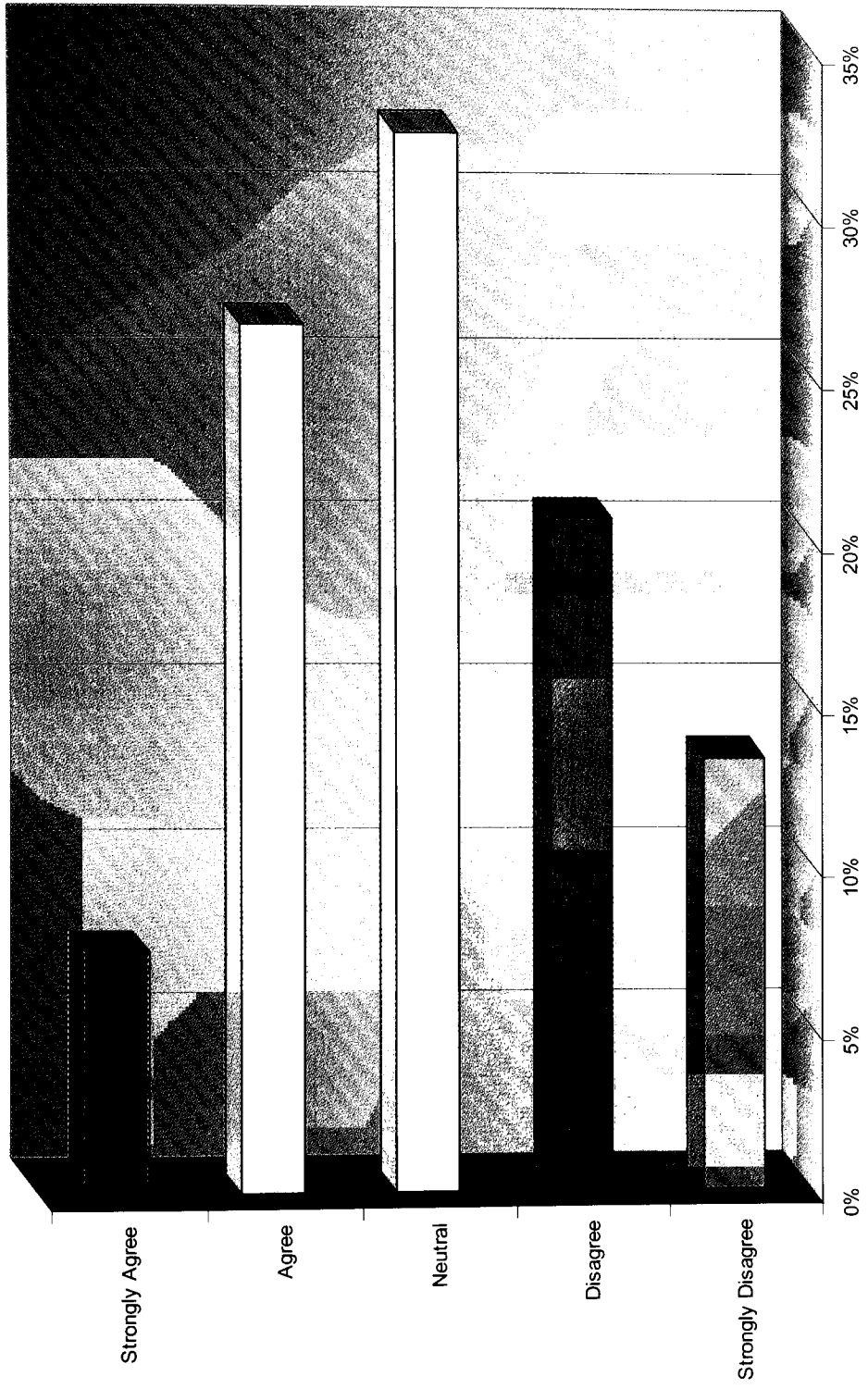


Figure 3. Laptops Increase the Amount of Time Spent on School Work

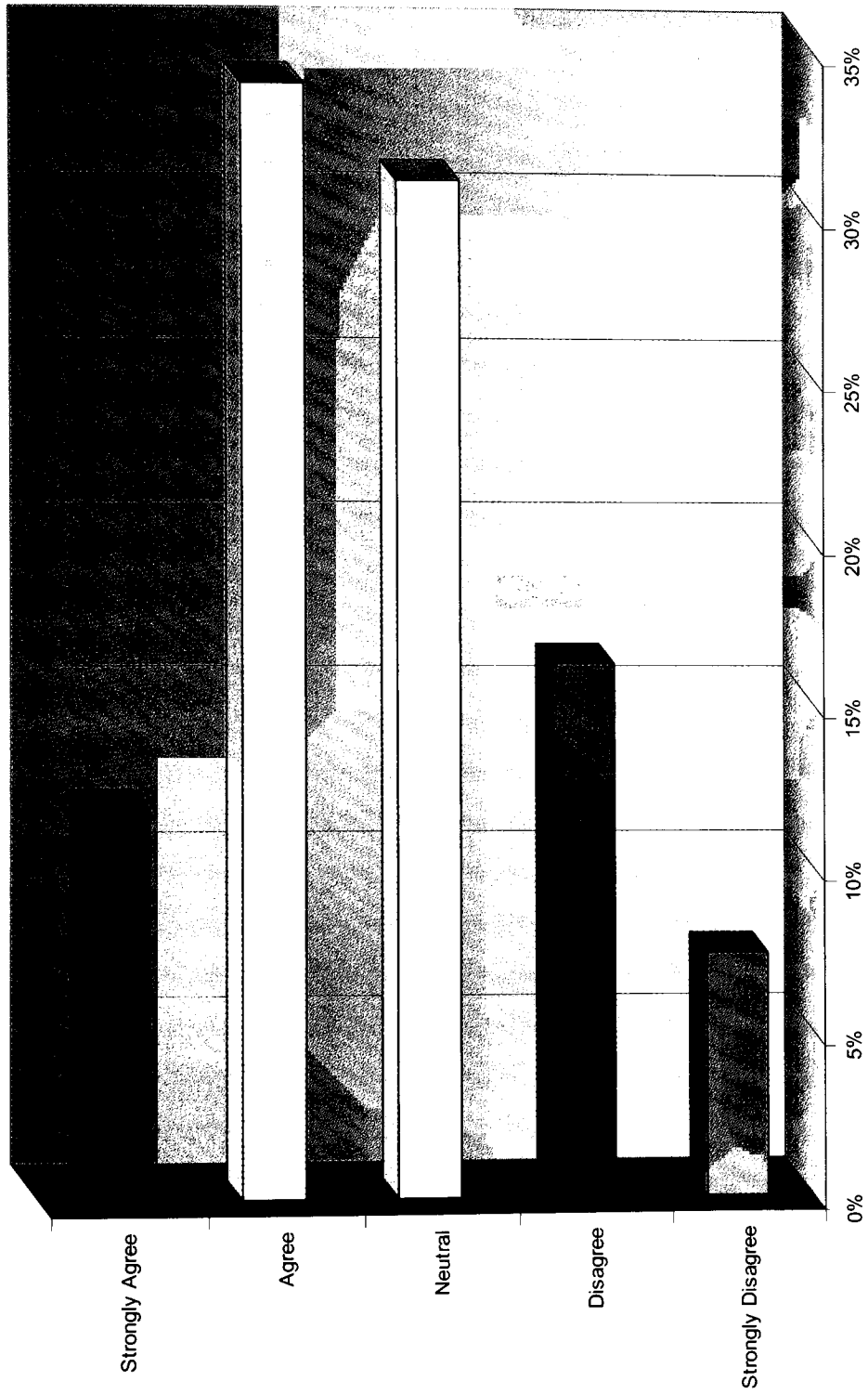


Figure 4. Laptops Increase the Amount of Work I Create Each Day

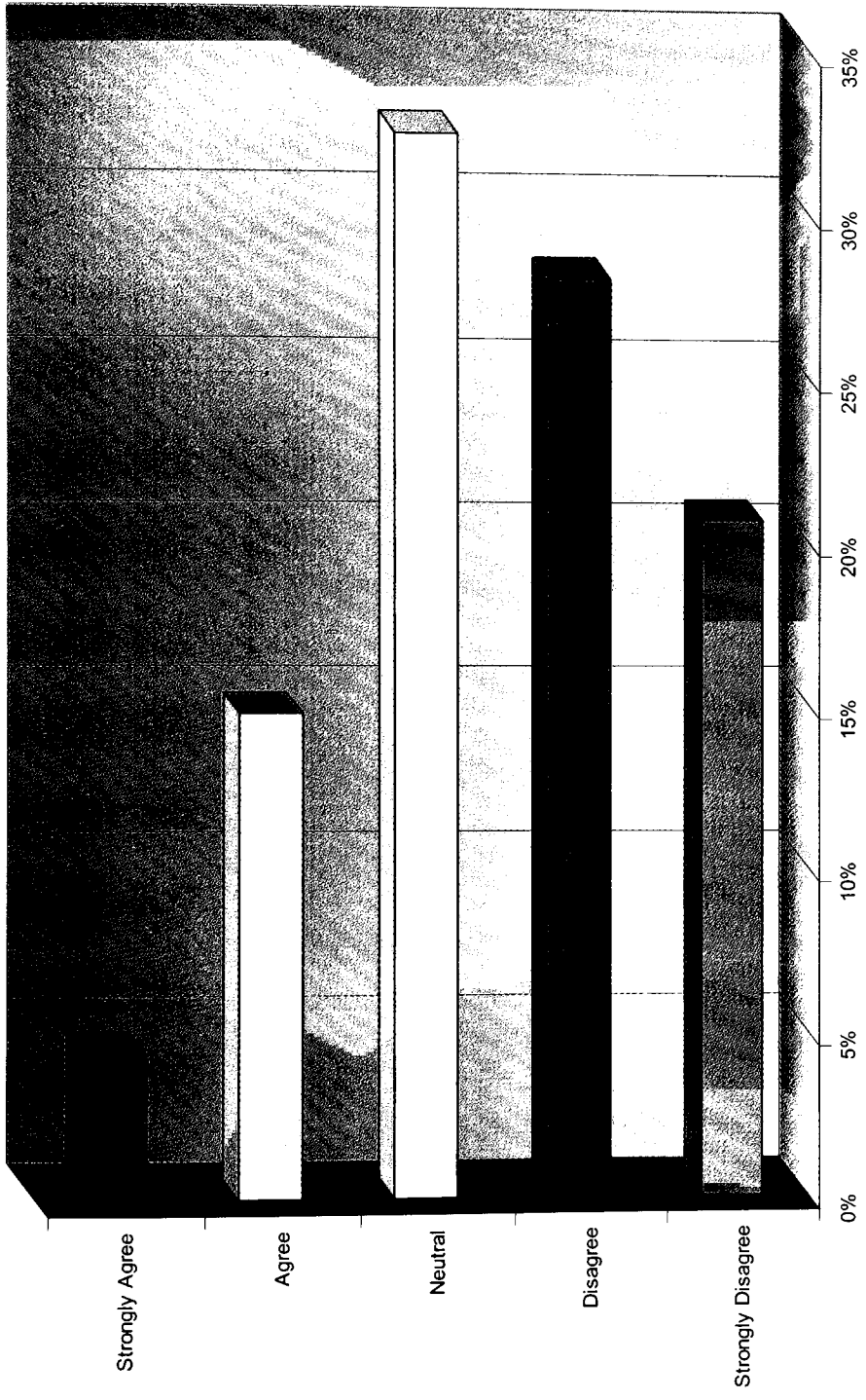


Figure 5. Grades Improved



Figure 6. Communication Between Home and School Is Improving

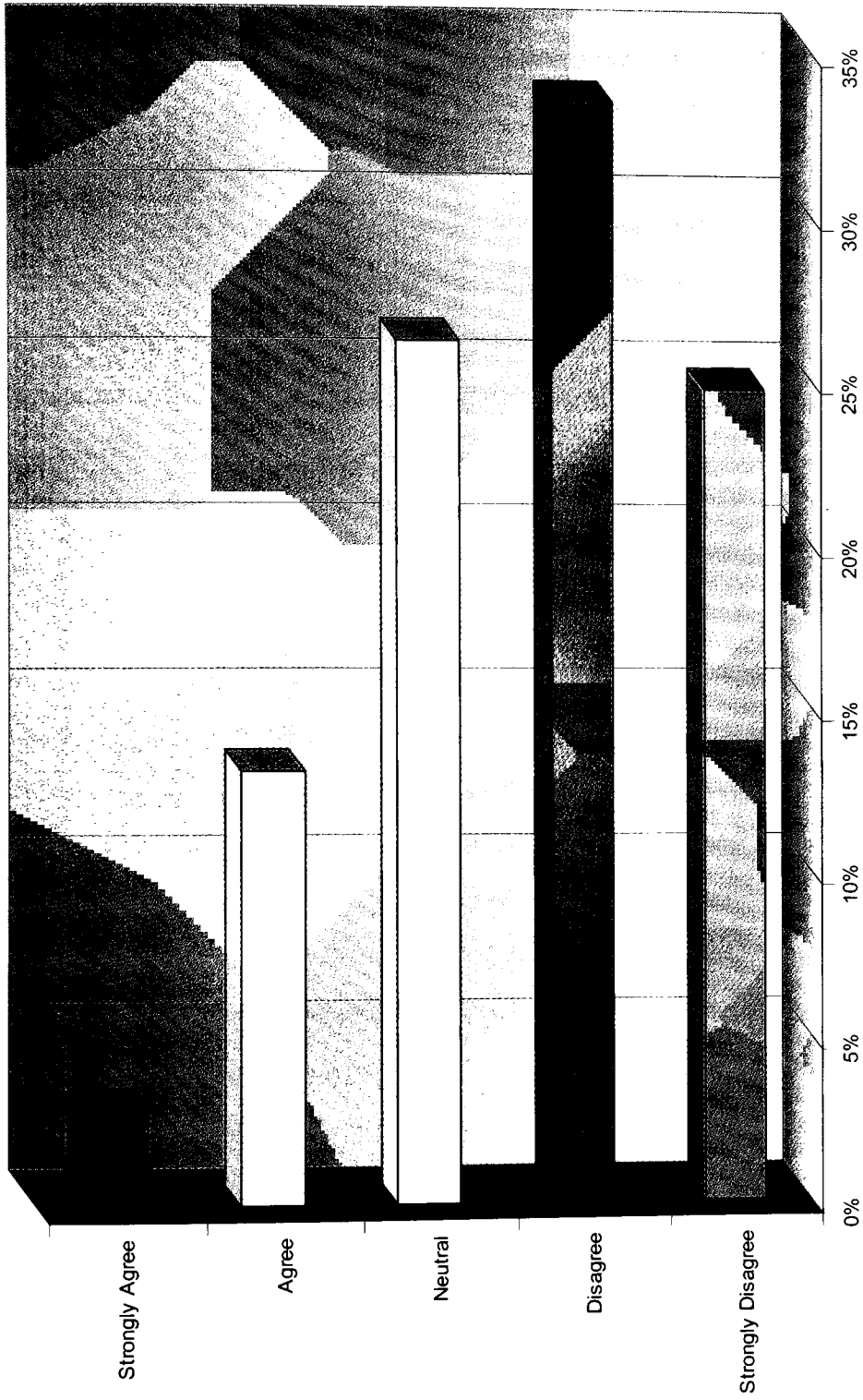


Figure 7. My Parents See My Work More Often

Discussion of Survey Results

Students involved in the program had a lot to say in response to the questions provided. It was obvious that their interpretation of the questions had different meanings from one student to the other. In terms of their perceptions of dangers 42% of students felt the program could draw students off task, lead to inappropriate use, such as gaming during class or viewing pornographic content. 22% of students also felt that discussing the breakage issues fit in the dangerous use category. Computer viruses and Trojan Horses (downloadable programs that serve a function, but can potentially cause damage or compromise data) were also a concern. One student also suggested ease of access could lead to issues like stalkers. The following excerpts from the written responses are quoted verbatim and were edited for clarity only.

One student suggested: I think it is way easier to get a virus and infect the whole school with it because of people down loading stuff. I also think they are way to delicate and that they break to easily.

And another suggested: I think that people could be going on sites that they weren't supposed to be on and some people that can track other people on the internet could find out things about the students and do something that wouldn't be good.

In terms of daily routine, 22% of students felt the laptops were too much to carry and the bulkiness of the packs made it difficult to store the devices between classes. A few students reflected on the reduction in physical activity – not going outside for recess, and spending more time on the computer at home. A small group of students (1%) also offered that the distractions associated with the laptop meant a lot of time could be

wasted – sending messages, playing online games or surfing the internet. 12% of the students appreciated the increased organization that the laptops offered. One student felt the systems offered more to the well-organized individual. One of the positive salient responses was that the laptop use improved research capabilities and improve the ability to complete homework. The negative salient response was that the laptops were not used enough in class to warrant carrying around the extra weight.

I do most of my home work on the laptop, and the only thing is that when u are riding the bus or walking back and forth to and from school it gets a little annoying when u have to carry 2 backpacks!

Students reflected on their learning and offered similar responses. 35% felt the program increased their typing skills, organization skills, and speed at completing assignments. 17% also agreed that there has been a strong increase in their computer skills. A few of them felt the access to a laptop allowed them to improve their grades – one student commented that it was easier to follow directions that were downloaded. 17% felt that there were no changes to how the laptops impacted their learning. This comment was often paired with the laptops not being used enough or to their potential. The most prevalent comment concerned the amount the laptops were used in class; one student summed it up in the following manner:

I found that the laptops provided a useful, convenient means of researching and completing homework, although they were not used for their full potential.

Another stated: I don't have to go to the computer lab. I can just pull out my laptop and use it, but it can be frustrating when your laptop

doesn't work because then you have to go to the computer lab and use one of those computers. They have helped me become a more organized student. Having all my different subjects sorted in different files keeps my work more organized.

When questioned about how the laptops improved what students do each day, students focused on outcomes related to school work. They were specific about the benefits in research, internet use, writing, and speed that assignments were completed. Many discussed their improvement in computer skills and typing speeds – overlapping responses to the previous question. They described successes in helping their own family in the use of home-based systems. There were a lot of negative comments mostly surrounding the reliability of the machines and the students' desire to see an increased amount of use in classes. Again, many suggested that there was no improvement in learning that occurred through the use of laptops.

I didn't notice any difference because we barely used them in class time.

For me, they didn't really changed how I learned things, because first of all, we barely used our laptops, and second of all, if we were about to use them, at least half the class didn't have one, or they were broken so we always ended up using the computer lab

I noticed that our typing skills get better and that we can do our homework faster.

I learned how to type faster and I could take it home and do homework on the internet. That was very useful. I got a lot of information on it.

Students were asked to reflect on how the laptops enhanced project-based learning. There was a range of answers from suggesting that the laptops increased the number of project-based assignments dramatically to no change in assignment types. Those students that supported laptops as increasing the amount of project work suggested the machines enhanced the process because sharing, communicating and collaborating all took place more easily. Students described sending pieces of shared work through e-mail and messenger software. Another student remarked how when they were sick, they were still able to get the work from home and collaborate with other students. Remarks linked to improved learning included students that found working collaboratively improved grades. Graphing, using presentation software and writing were the common tasks. The positive sentiments were mixed with negativity again surrounding the reliability of the machines. Overall, the students' comments were supportive that laptops led to more collaboration. The students also responded to the need for teacher support. Many expressed an increased ability to seek their own answers as a part of improved internet research skills. Some students expressed that the teachers were a main source for help on using the laptop.

Working with others has certainly improved because of email and other messenger programs.

If I am sick and at home a simple e-mail to the teacher or friend (allows them to) e-mail me the notes from the day.

I have done a large amount of essays on the computer, although it was mostly by myself. Laptops give us the opportunity to e-mail the class

our research notes back and forth if another person was absent from school or if we're working together on a project.

When I work in groups I use my laptop less because I'm not as technological as most of my friends but when I work with no one I use it a lot!

Yes we have, we have done more group based projects like searching for information to do posters and essays and to do more work together.

When asked what teachers could do to improve the L.A.P.T.O.P.S. program the students overwhelmingly stated that they should be provided opportunity to use them more often. There were a number of comments relating to improved supervision of student use and that teachers should be more knowledgeable and creative with the ways to use them.

The teachers can improve on the laptop system by taking away the laptop when they think that they are distracting towards a student or not. They can also improve by only letting students use the laptops during work periods and not lectures.

They could use them more and make us do more notes on laptops instead of paper instead of using paper the teachers could have a class folder that has our assignments in it.

Changes to the laptops program to make it more successful focused on improved reliability and power, backup, battery life, support and cases that fit in lockers.

Get laptops that are more tough and sturdy. These ones are not very teen-proof.

A second question was used to draw inferences out around student learning. The first question asked about changes in the way student learned, the second asked about how the laptops improved learning. A number of students, 7%, remarked that the laptops tended to take them off task and in fact detracted from improved learning. Others focused on the support the applications provided around spelling, organization, and how the laptop improved technology skills.

It has helped me become more organized and I believe I will greatly get skills from using a laptop.

It made research easier so I can get assignments in faster.

I am neutral on this subject because it has neither improved nor degraded my learning.

They just don't help you do work because they are a distraction.

When students were asked to describe issues, it was somewhat repetitive of comments that had already been submitted. Lack of reliability, large size of the cases, attacks by computer viruses, and the slow speed of the machines were all threaded throughout the comments.

Finally, students were asked to describe what was right with the laptops program and add any other comments they would like. One student summed up the comments succinctly:

the idea was a good one, it just needs a little more refining.

Final Reflections

I have been using technology since 1974, using a Commodore Pet with a cassette drive and programming simple games. While I was teaching, I was reintroduced to computers after vowing never to touch them again – streamlined into programming in COBOL and FORTRAN. A special needs student provided me a glimmer of insight into what just word-processing could do for a student struggling to write his name coherently. The magical enthusiasm he demonstrated as he showed me his work was life-changing for both us.

The students, teachers, administrators and parents in the Livingstone Range School Division accepted the laptops with eagerness and excitement. This enthusiasm was fed by the attractiveness of innovative technology in a school. The early success of the program was a direct result of learning about the technology. Teachers were immersed in the learning of their own laptop systems for six months before the students received theirs. When students received their machines, the teachers were able to easily pass usage knowledge on to the students. The standard use of the laptop systems in researching, creating information, formatting, saving and printing were parallel to what teachers were doing. The teacher remained the knowledge broker.

As issues arose – overheating, internet/network connectivity problems, damage, breakage, slow repair times – the novelty started to wear thin. And the concept of moving from a standard teaching process to project-based learning that was child-centred was not developed as a part of the L.A.P.T.O.P.S. program. The shift to child-centred learning is a glacial process, even when it is talked about and focused on as a part of the daily routine at a site. Granum School uses multi-aged, project-based learning as the

bedrock of its program. Evidence of the use of laptops in this environment was visible at every visit. Students' perceptions may not match the reality of what is occurring at the site because Granum's students experienced a large number of issues with damage and reliability of the laptop systems. Contradicting the student view expressed in the survey results was the ever present clicking of mice and keys in the school. Students used the laptops in multiple locations, they worked huddled around tables and shared and talked as they did so. In Livingstone School, I was thrilled one day as I walked into the school and saw something that students perceived as a normal activity. In one classroom, there were computers lined up in rows, connected one after the other, straight and orderly. Monitors in Armani suits and stiff ties stood guard, strictly directing student behaviour. As I walked further, there were two girls sitting side by side in the hallway. They were looking at each other's writing, making comments and suggestions to improve the work. They were laughing and having fun. There, on their laps, unfettered and unrestricted, were laptops. The girls were where they wanted to work, working how they wanted to work, comfortable in the process of using technology – relaxed and casual, *laptops in blue jeans*.

The students were using the systems as they were intended – in that moment, those two girls represented the format that allows technology to enhance education. It's not about the technology – it's about the learning. The moment that good teaching defines the strategies that students use to create knowledge and the students choose to use technology to meet those needs – the holy grail of ICT integration so often sought becomes tangible. In that moment, success can be embraced.

There were other examples of this success. Two students I interviewed described their use of laptops as positive, “to the nines.” These two students had self-described learning disabilities in the form of Asperger’s syndrome and dyslexia. They described the computers as the most important tool they had available. They spoke passionately about how it helped their writing, their organization, and their ability to match their peers’ success. They proudly described their ability to communicate what was in their heads into a format they could present to others.

I can finally take the thoughts that are in my head, and present them to others, and they can see what I am thinking... what I mean.

It is undeniable that the rigour of the systems must match the user. The systems chosen for this project were good machines. In fact many adults commented on how light and small and versatile the systems were. The issues surrounding protection of these delicate machines against daily use and abuse by students brought up on gaming devices is a contradiction to expectation. The technology team had an expectation that the computers were robust enough to handle use by Jr. High students. The initial cases chosen did not protect the laptops from the daily movements between classes in crowded hallways. The machines were designed to be used on the laps of adults in airplanes, or at individual office desks or in hotel rooms without being bumped and banged in over-crowded hallways or used by teenagers with peanut butter fingers and holes in their jeans.

If the negativity surrounding the delicacy and reliability of the systems were removed from this equation, it is quite possible that the teachers would have crawled up the implementation dip. This would have freed the students to meet the challenges created by project-based learning and shift education to a new place where technology is not a focus, but a layer that exists within excellence in learning.

Technology will always have a place in schools. The very nature of student learning suggests that a portable solution makes the most sense. Learning is an interactive process that involves movement, sharing and creation. Learning can be done without technology, we know that. But it is irrefutable that technology is a part of our daily experiences. According to Tapscott (1998), the digital generation learning in our schools is going to use technology every day whether it is used at school or not. Placing computers in educational settings allows qualified teachers to shape the use of technology

in meaningful ways – ways that will leverage the gathering, presenting and creating of information by students. Placing portable technology in educational settings means it can be used to complement the manner that students work now. However it is necessary to find the portable technology that is tough and inexpensive enough to make sense in our schools.

A friend of mine was smiling when she said that I am an obsessive, stubborn man. Further reflection reminds me that my friend is the same – obsessive and stubborn, and we celebrate those traits though they are boon and bane to us both. I think it is because when they are combined, those two traits become passion.

Passion in action won't save the world, but it will certainly change it. When passion is supported by knowledge, research and effort and then applied with purpose the results can be powerful. Finding others that share fundamental passions is a lifelong effort often unrewarded. Every now and then, if opportunity and circumstance cross, others that share passions can work magic to generate change processes that otherwise could never occur. The alignment of passion between two people is a powerful, amazing force that creates energy, strength, growth and unmatched magnetism that others are drawn to. When a team of people share the same passion the inevitability of change is accelerated. Connecting that passion in the arena of technology is a difficult one, especially when many teachers are sceptical that technology integration can make a difference in student learning.

Have you ever been in a situation where there was something inside of you that drove you to action? When something emerged from the fibre of the core of who you are?

When something was driven by passion, or by love or something more powerful – the merge of those two emotions?

There have been times in my life when that power has called me to a moment of truth – times when the brain functions on its own. When it engages within the spaces of its own unconscious processing. It happens when pulling carrots from the earth, washing cars, cutting lawns, shining bathroom sinks, or baking bread. For me, this happens during fly-fishing out in a stream with no one around. There's a rhythm that pulls the line through the air and lets it play its own music into the mind. The water pushes your waders against your skin and you can feel the power as gravity pulls those ripples on their own journey to better places. The sun is warming you from above and, at the same time, lights up your face off the reflection in the water. The line almost glows as it unravels in a metronome of light above your head.

All the thoughts that are out of balance find a place to settle and leave me at peace. It's right then that the brain becomes naked to its own truths and nothing else protects consciousness from the unconsciousness of free thinking.

It's during those moments of unsolicited deliberation when you can be suddenly attacked by a bold unabashed thought. It's then that thinking becomes a physical process and merges to feeling. That transformation of thought with feeling is a chord in me. It's the chord of truth.

In that moment the world becomes unfocused and lost. Everything fades to black except the single peal of veracity that is the church bell of a winter's Sunday. When the bell rings it has to be recognized as the toll of opportunity and change. That toll marks the

storm described in the introduction of this paper. I have heard the peal of that truth more than once in my lifetime.

In the core of who I am, I know that technology enhances learning. I have experienced it myself and have taught students for whom technology has been a transformational part of their learning. Technology can close the gap between diverse learners and create opportunities to match learning styles with assessment. It also provides opportunities for collaboration, peer sharing and knowledge construction rather than iteration and reiteration. At its best technology creates student satisfaction in a completed product. Further, during the creation of that project, technology supports building of the understanding of concepts and the knowledge, skills and attitudes that go beyond the regurgitation of researched data. It allows students to communicate on many levels and to share their work with a larger audience. It provides a means to make knowledge construction significant and real.

How many times have we, as teachers, heard from students that learning is fun? Have we heard it often enough? As teachers we get an opportunity to enjoy teaching and learning but how many of us embrace it? What is it that drives and motivates the child in the classroom? Where will children expend most of their energy and focus? Observe any fed and healthy child left to their own devices. I suggest that they will be burning energy to have fun. They will play games, dress up dolls, role play, colour, draw, read, interact.... How long will they listen to a lecture or copy information from one location to another for fun? How do you see kids interacting with technology? What I have witnessed is students engaged and having fun. If for no other reason, just for the fun of it,

technology should be a part of the learning environment. Kids working on computers are usually on a mission with a grin.

We know that students have a wealth of knowledge about using technology. We also know that a classroom that provides options for how students can present their work addresses needs related to learning styles and success. Reeves (1998) shows there is an encouraging indication that if students have access to multiple forms of technology and multi-media, we may see an even greater success rate. For now, there is a need for teachers to shift their teaching to best use technology as it applies to improving learning. This may be a difficult process, as most of us were taught in schools that had desks in rows and the teacher was the source of knowledge spewing details like a fountain. Many schools continue to follow this classroom model, even maintaining rows in creating computer labs. Moving to a program that is based on student-centred, collaborative, project-based learning occurs seldom and yet it is in those situations that technology creates its biggest mark on learning.

Recommendations

Mobile technology can enhance an educational environment centred on student-based learning and collaborative projects. Students clearly articulated that teachers must be up to the challenge. To ensure this, providing teachers with their own laptops was an important and critical step in the process of laptop integration. A missing component was the comprehensive professional development that teachers needed to support daily integration of technology in meaningful ways. This skill set should be only a portion of the professional development plan and would evolve as part of the training geared towards constructivist learning.

In terms of the technology in the hands of students, it was clear that rugged hardware was needed. To enhance the hardware use, consideration of storage and transportation of the laptops between classes and between home and school needs to occur. The students were adamant that it was difficult to transfer the equipment and their school work at the same time. Their feedback suggests that it would be important to move to a single technological environment that includes digitization of textbooks and handouts. This work has already started in many US States and in the province of Alberta a comprehensive study is in process by Alberta Learning in e-textbook use in grade 9 science.

Students also recognized that inappropriate use of the technology detracted from learning and that perhaps filters and supervision need to be put in place to rectify this use. Students didn't see an alignment between project-based learning and the use of technology, but the observations I have experienced demonstrate how project-based learning increases quality and quantity of the use of technology. Students clearly

suggested that the systems should be used more often and a shift in the pedagogical practise of teachers toward project-based learning would support this.

Technology exists today that can be used by junior high students and that stands up to their demands. The gaming community has provided evidence of that. Mobile gaming devices are small and hardy. To port these to a classroom setting with the functionality of a laptop will soon be within reach. Pocket PCs sell for under \$300 now and might be the better answer. The requirements in a school setting to provide support for laptops include changes to storage spaces, desk arrangements and easy access to power. As we modernize schools, a solid vision is required to ensure adequate ability to utilize mobile technology without losing the flexibility offered by most Jr. High classrooms.

If the L.A.P.T.O.P.S. program were to be repeated under similar circumstances, a comprehensive professional development program would need to be implemented. This would have to be focused on pedagogy – not technology. Project-based learning that is student-centred and focused on constructivism was part of the students' requests of teachers. Providing teachers with the knowledge, skills and attitudes to embrace this form of learning would shift the usage of the laptops even if every child did not have one to use. An attempt to utilize an online tool for teachers was initiated with the start up of the program with a strong focus on collaborative learning environments. This tool included a learning management system as well as shared resources and collaborative workspaces. A bandwidth issue at the start of the program caused this tool to be almost useless. It was soon dropped as a solution for our schools.

The students need to have a better understanding of how to use and care for laptops. Finding a way to protect the laptops from damage while still allowing them to be easily stored in regular backpacks would be a requirement in the request for information sent out to vendors hoping to gain the contracts for supplying the equipment.

Technical support and warranty issues would also have to be resolved. The need for tightly scheduled maintenance is a necessity – just having spares is not a good option. Students in these programs need to associate responsibility with ownership and consequences for abuse of the laptops have to match the use.

Finally, celebrating success is very important. Even with all the issues in the program, both schools continue to use the systems and have no willingness to give them up. The two sites continue to look for ways to increase the successes of the program. The L.A.P.T.O.P.S program continues and further recommendations and evaluations, in addition to this study, will be ongoing.

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Appendices

Appendix A: Survey Tool

Student Survey

Please ensure you are a student at Livingstone School in grade 7, 8 or 9 before completing the following survey. Results are a part of a study to determine student perception on the effects of using laptops on learning.

School: Grade:

Before you begin, remember that this is a reflection of the *whole time* you have had the laptop. Please think through both the positive and negative aspects over the entire course of being involved in the program.

1) What changes do you perceive in your daily routine that has been caused by the laptop?

2) What changes do you perceive in how you learn as a result of laptop use?

3) How has having a laptop improved what you do each day?

4) What do you see as the potential dangers of laptop use?

5) Laptops increase the amount of time I spend on school work.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6) Laptops have increased the amount of information I create each day.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7) My grades have improved because of using laptops.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) The communication between home and school is improving.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9) My parents see my work more often than ever before.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) Technology *should* increase the opportunity to work on projects with others.
Describe the work you have done on the laptops. (Have you worked with others?
Have there been more project-based assignments? Have you had to seek answers to
questions with very little help from your teachers? *Please describe this fully!*)

11) What could teachers do to improve the LAPTOPS program?

12) What other changes would you make to create a successful LAPTOPS program?

13) Use the space below to describe how laptops have improved your learning. If you
don't believe this to be true, describe how laptops have not helped your learning.

- 14) Other comments: (Please use this space to vent! What was wrong with the laptops program or what changes would you make if you were in charge?)

- 15) Other comments 2: What was right with the laptops program and any other thoughts you would like to add.

Appendix B: Student Survey Written Responses

What do you see as the potential dangers of laptop use?

- You have to worry about not breaking it. Need to back up every week in case your laptop crashes.
- You have to make sure that you back-up lots if not you can lose your info/notes and can't hand stuff in and you have start over.
- losing the work
- Someone breaking it and getting hurt by something on the laptop. but nothing really.
- I think one of the dangers is that some of the kids might be on MSN and talking to someone they don't know and the person might tell them to meet him/her some where! and we all know what that leads to!
- you get so used to them and always want them
- bad sites and more distractions during class i.e. internet, games
- I don't think laptops are dangerous themselves but some people who see the laptops as "wow now I can play games in science class" can end up falling behind and not getting good grades
- students may become "twiterpated" as Mr. Purple always says
- well there is always the inappropriate sites and if your laptop crashes you lose all the work you have done
- Getting off task ("twiterpation")
- temptation of games on websites and just twiterpation!
- viruses?
- if the computer crashes and all your work is on it then you lost all of your work unless you back up and even sometimes that doesn't work because the server can be to crowded. and also if you laptop crashes and you have an assignment on it then you loose that assignment and you have to start all over again.
- Internet
- People going off task (games) during class.
- The internet can and has tempted me and my classmates to do other things then school which has been a downfall for some of us on some of our assignments.
- The internet because people can go on the internet during class and play games and stuff.
- they are not exactly strong. they break very easily
- none
- don't know
- Some people could end up spending more time on computers just mindlessly playing games.
- Forgetting how to use basic tools such as paper and pens losing your writing skills, but that's not necessarily true we don't use them that much.
- To students: there have been some cases where a student will go to inappropriate websites.
To laptops: some students don't know how to care for a laptop all that well and so

many of them get broken and causes the school to lose more money and causes parent

- More use that is not for educational purposes.
- If you break it then you have to pay for it and then you get in trouble.
- Breaking them and accidentally typing something bad and going to that site.
- It can be a danger for the school, your self, and the computer it self, people can use it for improper things. I can get dropped causing damage to the laptop.
- Loosing school work if the laptop isn't working or it has broken down.
- They are always breaking, from staring at a computer screen to long it causes sore eyes. and when you do use a pen or pencil you have messy writing because you have been typing to often.
- I think that people could be going on sites that they weren't supposed to be on and some people that can track other people on the internet could find out things about the students and do something that wouldn't be good. Also, people could log onto other computers.
- I think it is way easier to get a virus and infect the whole school with it because of people down loading stuff. I also think they are way to delicate and that they break to easily.
- Online strangers are a potential threat of using the laptops.
- They would go to bad sites as popup and show up like we went there, and also they would transfer worms and viruses.
- People would be distracted because other people would e-mail them or somebody would go porn surfing.
- If you touched the screen you could ruin it. You had to be very careful with how you handled it and made sure that other people did not bump it or something like that.
- Some people might go on bad sights at lunch and get some ideas that might in danger fellow class mates.
- Well we don't write as much and that could become a problem in high school when we don't use them any more.
- People will be tempted to go on things that are not appropriate.
- They get tossed around and break. If your friend breaks it you have to pay for it. They brake to much.
- they always get in the way, and you have to take care of them, and people seem to go to inappropriate sites and stuff
- Printing and downloading music, games, etc.
- Well, many people caught viruses, and some boys went on inappropriate sites, which caused other viruses.
- really nothing much but the kind of control, like the use of web sights people may be on from time to time on their laptops, it is dangerous to be on inappropriate sights and we as students should have a guard on the laptops so we do not go on those inappropriate sites.
- The laptops could get viruses that could spread to all the computers.
- There could be virus's that can take all your school work off and ruin the whole laptop.

- If using at home, people may go on inappropriate websites.
- People are tempted to use inappropriate or non-educational sites or games, etc.
- I think it is a waste of time and money because lots of people abused them.
- if they get broken you may have to pay for them and that's not good. You may be tempted to go onto game sites that are not school related and get in trouble for it.
- breaking them by accident and having to pay for it
- miss usage-porn, downloads games, inappropriate things
- the people could play games on them and get viruses.
- Breaking them and then having to pay for the damages.
- There is internet stalkers and if they break then there goes my savings.
- They break easy, they always seem to be breaking down and not logging on to the server.
- being broken and people not being honest
- talking to sickos on internet and having stalkers
- Internet abuse
- there are very unacceptable sites and things that always pop up.
- hackers using your name
- they get broken a lot and hackers
- The cause of breaking them and paying every single time could cause a loss of a lot of money you could use on different school purposes.
- electrocution
- I see potential abuse of the laptops, I.E. internet sites with graphic content and/or potential viruses being brought in.
- possible electrocution.
- I do not see many dangers in using laptops other than easier access to games and inappropriate sites
- The only danger that I see are eye problems caused from staring at a computer screen too much.

What changes do you perceive in your daily routine that has been caused by the laptop?

- takes more time to get ready because you have to pack it all up in the morning.
- I don't always go outside for recess
- coming to class early to start up my laptop
- I have spent a lot of time on the computer now since I have had it. most of my homework is done on my laptop.
- I do most of my home work on the laptop, and the only thing is that when u are riding the bus or walking back and forth to and from school it gets a lil annoying when u have to carry 2 backpacks!
- I used to just sit around at home and be bored and when I got my laptop I played games and went on the net.
- Less time doing physical activity
- nothing really. sometimes when I do work on my laptop and the server goes down I cant get it printed.

- I haven't really noticed any
- access to files that the teachers want us to have
- I do pretty much all my work on my laptop now.
- I have been more organized and my typing skills and grads have improved. But also the temptation of the laptop sometimes affects the routines of my life.
- it has improved my typing skills
- before I got the laptop I use to write on paper and pay attention but now that I have the laptop I don't really pay attention that often.
- Having to pack it up before I go to school
- I do all my work on the laptop.
- I do not require to carry and use pen and paper as much as was needed before. this has been a positive aspect in some ways but a negative as well because my printing and handwriting are not as adequate and perceivable.
- Not too much has changed I never used the laptop that much this year. I only used for essays and sometimes
- The laptop has made it way easier to learn and enjoy learning
- get more done
- none
- We were able to use our laptops so we didn't have to leave to classroom. We didn't have to worry about the lab being full and we were able to get more work done.
- I don't have to go to the computer lab I can just pull out my laptop and use it, but it can be frustrating when your laptop doesn't work because then you have to go to the computer lab and use one of those computers.
- We come into the classroom and we turn our laptops on and we start our assignments. Some laptops didn't work so we had to go into the lab and sometimes that never worked so we and to go to the mini lab and if that lab was full we had to share with another
- We use computers and the internet a lot more.
- It would take some time to get the laptops loaded so it would take up time.
- some of the changes are that there was a lot less class working time and we weren't in the lab as often as were regularly.
- You can not eat or drink near your laptops, so you or your laptop has to move. You have to know how to use a computer.
- We don't have to go to the comp. lab to check out websites for mainly core subjects. The laptops sometimes interrupt the class if the server is too slow and the laptops are not working or the laptops make a weird siren sound when you turn them on.
- Projects involving the internet were used more often, computer skills have improved a lot.
- I have perceived that the laptops are a bit of a hassle for those students that are less organized than others. The cases were too small to fit in the lockers and we couldn't leave them in a classroom so we had to carry them with us everywhere and lots of
- I am a way better typist than I was because of all the typing we had to do one the

laptops. I am also better with the computer and working on it at home or at school.

- I have made more contact with my computer at home & I do not take to much time using the internet at home.
- The laptop bags were often a nuisance because they were too big and didn't fit in the lockers, so you were stuck lugging them around.
- We wait for a long time for everyone to get logged on. It wastes class time. we also though were able to do more stuff because we were able to access computers.
- We went on the internet in the classroom as a class. Lots of times the laptop would not log on because the server was down. We didn't use them that much. They were a pest because the cases were so big.
- I have had not many changes at my daily routine except that every once in a while we would use our laptops for internet research or projects.
- We go on the internet and go to the news sites and subject sites to learn.
- It was mainly just something extra that I had to carry. I only used it for after school typing up some of my assignments or going on msn.
- it was harder because they never worked and they were so slow. We lost a lot of class time. They helped us some times to.
- we didn't use them much, and they just got in the way
- we didn't really use them in class. I used it more at home for homework and stuff.
- Well, we didn't really use them in class, and in certain cases they were both good and bad. Good because they were faster than the computers we had and we were able to use faster internet and home, but bad because everyone was so worried about where they
- finishing homework a lot faster, and going on msn after school to check my hotmail.
- In some classes we didn't even use the laptops, but classes like social and science we used them for research and to type up assignments. We had to carry them around and I personally liked the smaller cases better, because they fit in my locker.
- We didn't use the laptops in class very much, we had to carry them everywhere and I would use the laptop at home to go on the internet or for school work that needed to be typed up or research.
- I used my laptop for typing up assignments, surfing the net, and using MSN Messenger.
- After we had the laptops and they were up and running, I used the internet a lot more than I ever have, but a lot of it wasn't very educational or productive work.
- I hardly used the laptops during school or at home.
- they didn't make that much of a change because we never used them. the reason for this is because there are usually broken or there's a malfunction. I have a computer at home with internet so I never used mine this year.
- I don't use it much and it doesn't really change much but it makes it so you carry an extra thing.
- we didn't use it a lot and it became an extra thing to carry.

- I didn't like the laptops because it was too hard to handle from class to class.
- It is just an extra thing to carry around and isn't used that much.
- We carry it around and hardly use it, it is just another piece of luggage that we have to carry around to and from school.
- The only change that I noticed was packing all the extra weight with the bag and the laptops themselves. I didn't really notice us using them that often in class time.
- the laptops are a study tool
- less work done more time wasted
- carrying the thing around
- I have spent more time using the internet for work because of the easy accessibility.
- carrying them around everywhere.
- it help with finding and searching for stuff when it worked
- I find that we have to rely more on technology and the internet.
- The laptops haven't really changed my daily routine.
- I found that the laptops help us out with our homework we used the laptops a lot for research which was a huge advantage.
- They affected my technology skills a lot I learned how to use a computer way better and faster than what I could do before. The changes I perceived are that the laptops didn't work very well in a classroom setting , they were useful in social class but no other
- I found that the laptops helped us complete homework and was a good resource in my learning.
- I have started spending more time on homework, and work harder so that I could do whatever I wanted. In social we used the laptops a lot and in other classes not as much but it made it easier to do the work.
- I found that the laptops provided a useful, convenient means of researching and completing homework, although they were not used for there full potential.

What changes do you perceive in how you learn as a result of laptop use?

- started to type faster, learned to write better.
- I can take notes quicker and neater so other kids who missed can actually read them (HAHA).
- I can find my work
- I think that I have learned a lot more about the laptop but not totally sure I have learned more about information on my laptop because sites can catch your attention. I have learned probably as much as I would without a laptop.
- I think that when the classes have started they should shut down the internet so people don't get distracted and play games when there is a important discussion going on!
- on word it is better because it edits my work for me.
- I think I learn better because you have more resources available to you i.e. the

internet

- no real big changes
- we did more things electronically
- I can type a lot faster I can organize my files a lot easier so when I need them I don't have to look very far which helps me study
- I learned really good typing skills. I also learned good research skills.
- My grads have increased and its good
- gets my work done faster
- I think I kinda learn better with the laptop because it allows me to find research way easier then just having to go around looking for it.
- I now know how to operate a computer and did not know how to before. This is a very important
- More online references and resources such as ExamBank have been of great use in helping me perceive the required education. The laptops basic tools such as the word processor and the advanced tool E-Text have been of great use as well.
- the laptop has made it easier for me to take notes quicker. it has also given me easier access to the internet for research projects and similar
- good source for work
- not very much
- We were more up to date with the news and we could learn more by going on the internet and finding out information really fast.
- You learn how to be responsible around expensive things like them. You learn a lot of computer skills, that you never had a clue about before. You also develop better typing skills.
- I have improved with my computer skills and I have definitely become faster typist than I was.
- We are getting better with computer skills and searching the internet. I am getting better at typing.
- we learned better and quicker than usual about the news because we just needed to log on to our laptops and we could look at the news.
- that we learnt a lot better then with pencil and paper.
- I was learning the same as I did with out using a laptop. The laptops worked when you didn't need them and they didn't work when you needed them.
- You can learn more information in classes then if the teacher is teaching you, but if the server is down the teacher can teach you much better than the laptops.
- I see that computers are part of the curriculum in many different classes and a lot of the information that we research for projects is done on the internet.
- I don't think that the laptops have helped students learn because they were more of a hassle than anything else. We barely ever used them and they got broken so people couldn't use them.
- I find it easier to fallow directions on the computer when we and downloading some thing or doing a word document.
- My skills have improved on how I do some of my schoolwork. I use the laptop only when I need to.
- I learned how to change how to input different internet connections and other

useful skills, but they often broke down and we were stuck using the computer lab anyway.

- On the laptop we were able to watch movies and could find more info on the topics we were doing.
- I learned how to type faster and I could take it home and do homework on the internet. That was very useful. I got a lot of information on it.
- The laptops made more room in the computer lab so more people can use the computers at once. Every one can get more done in class.
- We play games on our subjects to help us learn in a way that is fun and fast, and we go on them to take a look on what is going on in the world.
- I didn't notice any difference because we barely used them in class time.
- We are better with computer and do better some classes.
- not a lot
- We didn't use them much so I don't really know.
- For me, they didn't really changed how I learned things, because first of all, we barely used our laptops, and second of all, if we were about to use them, at least half the class didn't have one, or they were broken so we always ended up using the computer
- can get homework done faster and homework was able to be saved and printed out neatly on the date it was due.
- The only way it could have had any influence on my learning is I used the internet a lot.
- There weren't any because we didn't use the laptops very much.
- We didn't really use them enough, in class, to learn that much more than I already knew.
- For a lot of classes, we never used the laptops because they weren't a reliable source. We either used the lab or didn't need computers.
- During the school year I only learned how to put graphs on the computer.
- There is no change in how I learn because we never use them.
- I didn't really learn any thing on them
- That we didn't have to go to the computer lab to research something. But they kept on breaking down.
- I didn't really learn anything on it.
- We only learned how to operate it and once how to do graphs in math, sometimes in social and science but very rarely.
- I learned how to make a brochure and that was about it, but all the other things I knew.
- how use them
- stronger and better internet connections
- Expands computer skills.
- Its harder to learn with the laptops because they always brake down.
- my spelling skills might go up
- I notice that our typing skills get better and that we can do our homework faster.
- I don't think that it made any big changes in how I learnt because we never really used them. But to do research on the ones that worked was a little bit useful.

- we have more resources for researching projects.
- The changes I perceived were that my technology skills were boosted because of the laptops, and that my typing skills got way better than they were before.
- it helped me in learning the subjects that required research and internet use.
- I have learned how to use technology more efficiently and that I now can use a lot of new programs better and can do things better and neater
- The laptops were more convenient than desktop computers, which meant less time spent moving into different classrooms, and with internet available researching different topics and doing activities online was possible. We also learned a lot about the comp

How has having a laptop improved what you do each day?

- my work is neater, spelling is better.
- I am able to write stories/novels on the bus because if not it is too bumpy
- yes because it has made my assignments neater and more organized
- I am able to make sure I don't lose things by making sure they are saved. it's easier to find things when your laptop is sorted. learned more on my technology
- when u have a major assignment due or something it is easier because u can write out your "rough copy" and due your "good copy" without having to wait till u get home and then waiting till your bro gets off the computer. and it is especially handy for the kids that don't have computers at home then they can get their assignments neat to!!
- it has improved my learning because I can go on internet on exam bank and all of the useful websites.
- Laptops have improved - typing skills - computer know-how
- having a laptop improved my typing skills and it helps with writing letters or essays because you can make changes without having to rewrite the whole thing over again.
- If someone misses a class, we can just email them the notes
- I can organize my work a lot faster and easier
- I can type fast which makes it easier to do essays and stuff.
- I don't get as much physical activity but I get my physical activity other ways.
- I get done my work quicker and it is done neater
- I think the laptop has improved what I do each day because I can finish work on time and have it saved just in case
- Makes doing assignments easier
- It has helped me be complete my assignments faster to do the word processor and accessibility of the Internet.
- It hasn't changed much
- get work done faster and can change mistakes easier
- it has improved my work
- My typing skills have improved a lot and I understand how to use a computer much better.
- When I don't feel like handwriting something I can just pull out the laptop and

type it. Or when I have to do a report I can just go on the internet and look up information I need to know.

- We never had to worry about booking the lab and the Sr. High students never had any wires crossed.
- It improves my learning by giving me quicker access to the internet and we go on different learning sites more often because we have our own laptop
- it allows us access to the internet sometimes with out us even leaving the room.
- it improved in my typing skills but if we still had them they will still improve.
- The laptops didn't improve my day because we hardly got to use them.
- it has sped up the working process but slowed it down sometimes to.
- Having a laptop has maid assignments easier because you can type instead of printing, which is faster.
- It has improved by giving us internet access without having to leave the room, but not all of us could go on at the same time because there were already people on the server and there wasn't enough space for us to be on.
- I can type faster and I know how to trouble shoot instead of being stuck all the time. I no how to use computers responsibly and carefully. I no what kind of stuff to click on.
- Having a laptop hasn't changed my day at all, but my daily classes have changed a bit. I don't mind at all.
- The laptops were convenient for us when they were working properly and saved us from having to book the lab in advance because they were right there.
- It has made it possible that we were able to learn more about a subject which would help on the unit exams.
- It helped a lot when you were doing some kind of research project. You could go on the internet and look things up. You could also type out stories on it and things.
- It has improved my life by having access to a computer where ever I go.
- It makes research and learning faster for me and maybe some of the other students in the school.
- If I had to pick something I guess it would be that we didn't have to go to the lab for the internet.
- Now I can help my mom with the computer at home or help my cousin with his computer at his house.
- it hasn't really improved much, because they got in the way and they weren't being used much.
- it hasn't improved at all but it might've if we used them.
- It didn't really improve anything for me other than the fact that I could use my laptop at home with faster internet then using my slow home computer.
- because I can use it right after school complete home work and send it right to the school no problem
- It hasn't really improved what I did each day
- It allowed us to go on computers during class instead of going to the lab but, it didn't improve a lot.
- I had an access to the internet at home and was able to word process assignments

at home.

- It hasn't improved a lot of things, but it was good when you needed a reference to the internet or something.
- the laptop did not help me at all because we barely used them.
- it hasn't improved anything.
- it hasn't really improved what I do much
- it hasn't really improved anything
- We hardly used them
- It doesn't improve anything.
- It hasn't improved anything. It is fun some times at home but only if you are hooked to the internet.
- I can do homework at home faster and more efficient.
- I was learning new things about the computers
- it helps be providing me with the internet so I can find different research that I need
- it didn't
- It hasn't really, I only used it at home for homework purposes occasionally.
- the convenience of having internet
- it makes classes better bad faster because if we are doing notes we can finish them faster.
- I think that having the laptop made my typing skills more accurate for me.
- it helped my typing ability. it also helped me to understand tech.
- It has improved what I do each day by increasing my typing skills, and my fixing technology in my own home skills.
- it has improved me in my study skills.
- My work is neater and I have easier access to it at home, and it is easier to do it. I feel that I do my work more efficiently and quicker.
- The laptops created an interesting means by which to do research, type up and create projects. They also made doing these things listed above more convenient.

Technology should increase the opportunity to work on projects with others. Describe the work you have done on the laptops. (Have you worked with others? Have there been more project-based assignments? Have you had to seek answers to questions with very little help from your teachers? Please describe this fully!)

- yes because if there is a group assignment you can email your work to the others.
- I have searched the internet and not have to had as much teacher help. It is harder to do group work because you can't work on other peoples laptops.
- yes because we can e-mail or information back and forth
- I have done work with others as we have been able to communicate through e-mail. I also do get a lot of information from the laptop but still ask the teachers. But rarely.
- when I work I groups I use my laptop less because I'm not as technological as most of my friends but when I work with no one I use it a lot!

- I have worked on social presentations, math journals, science journals
- I have done a large amount of essays on the computer, although it was mostly by myself. Laptops give us the opportunity to e-mail class our research notes back and forth if another person was absent from school or if we're working together on a project.
- this year I did almost all of my work on a laptop, including : essays letters notes journals ect. Our school is project based. It helps us all learn to deal with difficult people so I haven't really noticed a difference in the number of projects we've done.(It was easier to share and gather information with internet resources available though)
- this laptop helps when you are trying to a write up for a project and when your trying to research information but it's hard to do experiments on the laptop so I just usually do the experiments on paper or somewhere else
- I work on our schools newsletter with my laptop and it is extremely useful in that sense.
- I have done all my assignment except those dealing with math. Working with others have certainly improved because of email and other messenger programs.
- I have had to do social assignments which included a lot of research, PowerPoint presentations math/science journals stories/essays
- I have written many essays, stories and poems on my laptop. I have worked with other people who don't have a laptop on assignments.
- no I don't think there has been more project assignments based on the laptop.

no I still needed help from my teachers regarding the laptop or not because the laptop can't always give you the correct answer.

- I've done more essays
- We did a power point in groups and I thought that having a laptop helped this because we could send information to our group with a click of a button.
- With the laptops I have cooperated on assignments with many of my classmates in the classroom and from the home via email. because of this I have perceived ideas from other minds that have helped me understand the aims of the curriculum from many other views then my own
- I haven't had much of a change in anything with my laptop a few times I did some assignments on my laptop but most of the time I just used a pen and paper.
- if I am sick and at home a simple e-mail to the teacher or friend and they can e-mail me the notes from the day.
- it's a good source for work
- they should get high speed internet
- We have done research projects on our laptops to start a project. It made it way easier to find information without a teachers help.
- We have done a few power point projects on them, a few we got to work with other students. When we did animal reports we had to look them up on the internet they were very handy. When we had to write short stories in Language arts are typing skills all imp
- I have been working with others and yes there have been more project-based

assignments. In social we also looked at the news around the globe and we did assignments on those articles. We have had to find answers our selves and we have become more trust worthy.

- Yes we have, we have done more group based projects like searching for information to do posters and essays and to do more work together.
- we have looked at the Calgary Herald we made power points and we wrote stories, we also made a brochure.
- work with others was better because we worked better .
- yes technology should increase the opportunity to work with others.
- yes I worked three times we a partner(s). I have done reports and other quick paragraphs and such on our laptops. yes and no the questions I asked the teachers were relatively the same.
- On the laptops we have done PowerPoint's and other assignments sometimes with partners but mostly single. I have had to seek questions without a lot of help from teachers.
- It has sort of increased the opportunity but not fully. Some people just cheat and copy off other people, but they can also help each other. We have worked with others and there has been a few more project-based assignments. We had to look up some questions
- we have done reports on animals we have had to do power points and right-ups. I have worked with others and I have done project-based assignments with other students. the lap tops have been very helpful in finding information for projects and other topics
- There are not that many project-based assignments, but I have work with other students with the laptops. Some questions I have had are easy to answer using the internet.
- I have noticed more group work and technology use. Yes I have worked with others on laptop projects and go to educational sites to improve our logic and math skills mainly. The laptops do help me with things that I had usually asked the teacher
- We have done PowerPoint's subject surfing and Microsoft word. we worked with others and they ended up copying our work. We haven't done project-based assignments. we haven't had to look for answers with little help from teachers.
- With projects that you had to get information from the internet, that was handy. We did some projects with other people and got really good grades on it. When I did not know how to work something on the computer, I had to ask someone how. It was useful be
- On the laptops I did work with a partner once on a PowerPoint project. There was no more project-based assignment than usual. No the laptops did not help me seek answers to questions.
- We have done math assignments and we have done power points in almost every subject. We have worked with others on our assignments. I think that there has been more project-based assignments. Yes I have still had to seek answers to questions with very little help.
- We barely ever used our laptops so I cannot really answer this that fully. When we did use our laptops it was a bit easier because we didn't have to go to the lab or

book the lab for that class.

- We worked with others on laptops. Over half of the projects were based on assignments. We had quite a lot of help.
- not really, because we barely used them, but they were alright when we needed to find something out and the lab computers were unavailable and being used. but other than that, they weren't all that great
- We hardly use them in class, the internet doesn't work for some of the laptops therefore we cant use them, and there just more luggage for carrying.
- Well, when we used our laptops we did some class projects, like searching on the internet for facts about the Greenhouse Effect if the lab was full. We were also able to look for answers to questions without bugging the teacher too much or being confused.
- the laptops made it very help full to access things off the internet for the classes very easily and students spent more time on their laptops doing homework for longer periods of time because they had the proper technology, that was provided for them ad
- The laptops did allow me to type up my assignments at school without using the lab, and my parents usually worked on our computer so I couldn't. I didn't use to have internet at my house, so I could do research at school on the laptops.
- We have done graphs, PowerPoint's, searched the internet for information, and typing information.

I have worked with others and there has been a couple more project-based assignments. I rarely had to get help from a teacher to answer a question using the

- I have created PowerPoint's for many different classes, other people worked with me on it but it was mostly on the same laptop due to complications with their own (laptop). We didn't do much group work together on the laptops, we used the computer lab more
- We never really used the laptops for projects, we mostly used the lab for stuff like that. For the occasional project, we were able to work with others at someone's' house, and we weren't limited to people who had computers. There was usually at least one
- throughout the school year yes I have but only when the teachers assigned us power points and movies.
- We have done PowerPoint's, movies, video editing, we used the internet a bit more to find information. we worked with others sometimes in our PowerPoint's and movies.
- we have learned math graphs on them and how to use different programs like PowerPoint movies and internet research, I have worked with others on PowerPoint also making movies, there hasn't been many projects. no I haven't answered questions on it.
- learned to do math graphs, some typing, how to use different programs, power point-others I have worked with. video making, internet research with others too. also working with some kids for reading with them too.
- we worked with others it made the work a little faster. There have been more project-based assignment's. no
- We learned to do graphs in excel. We did work with others on PowerPoint's and

finding things on the Internet.

- We haven't used the laptops a lot. One time in French we had to do a PowerPoint on animals and prepositions, but no other projects like that . We did use them to look up information in science and social but that's it.
- I did a few projects with other people. PowerPoint projects, movies and word documents.
- finding info about people
- we did a bit more projects like power point but it didn't make a big difference
- It was useful for research and finding new information on current events that is not located in encyclopaedias. I didn't ever work with others using the laptops. The laptops decreased in usage as the years and time went on. I only used my laptop at home, an
- on our laptops we do a lot of our notes on them, and presentations like PowerPoint. we also do our assignments which makes classes go faster. yes we had to seek a lot of help from teachers especially when our laptops have something wrong with them. yes we
- We haven't done that much work on the laptops as I thought we would when I got my laptop. We didn't really have more assignments and we also had to ask for help from the teachers if we didn't know how to do something on the laptop.
- in science we have made a power point presentation and we have worked on our own more
- I have done many PowerPoint presentations focussing on the major components of the class the presentation is for.
- to be honest the only time I used my laptop was in social studies because the other teachers did not want to use them.
- Using the laptops I have found that I was more able to go and work on projects like PowerPoint with partners by taking it home, working on it and combining them at school. You could also do more project-based assignments because you could work on them at
- Actually we did a lot of work on projects in subjects such as health and social studies using the laptops, projects that we worked together in. We had to seek for answers that we had little information on sometimes, but not too often, a few times in social

What could teachers do to improve the LAPTUPS program?

- Have backup laptops so that if there are people who can't use their laptop they can still work on a laptop.
- check on laptops a lot more because lots of people are always playing games
- have more docking bays
- put more space on them
- Teachers could improve the laptop program by having a ready supply of power cords available and designating an area for charging laptops.
- help you figure out how to work the stupid program
- It is good the way it is.
- Nothing really
- stay the same
- The teachers can improve on the laptop system by taking away the laptop when they think that they are distracting towards a student or not. They can also improve by only letting students use the laptops during work periods and not lectures.
- Get A drives to we can transfer stuff to our home computer.
- Allow us more time to use them in class rather than lectures
- I don't really think they could do anything except for make sure that people don't go on games during class
- accept e-mailed assignments more often.
- high speed internet
- get better laptops
- They could do more projects that use the laptops for the main source of information and they could encourage us to use them more.
- Learn more about computers themselves.
- Assign more assignments on them that we could do for homework.
- They could try to get more programs in the laptops and let us use them more.
- use them more.
- get new laptops.
- The teachers should let us use them more.
- use them more.
- They could use them more often we barely ever used them.
- Get people to use them more and have them in more practical cases that could fit easily into the lockers. Also the teachers could allow the students to leave them in the classroom during classes that they don't need them.
- They could use them more and make us do more notes on laptops instead of paper. instead of using paper the teachers could have a class folder that has our assignments in it.
- They could supervise more students when classes are joined.
- The teachers were great with helping on the laptops but they broke down fairly often so the teachers couldn't have done much.
- update the server or something so they work when we use them.

- We could use them more. We hardly used them but maybe because we were in Gr. 7 and did not have a class called cts.
- Make them faster or get new ones.
- I don't think that they could do too much.
- Let/make us use them in class more.
- Clean the programs often, by new programs.
- use them more
- let us actually use them in class instead of them being just extra luggage. and making sure they don't break easily.
- I think teachers could probably let us use them more during class.
- nothing really I liked how the laptops were
- They could let us use them more for our projects and assignments.
- The teachers could let us use them more during class.
- They could allow us to use it more in class and have more assignments that required using a laptop.
- They could work them into their lesson plan more, provided they were a reliable enough resource.
- they can start using the laptops more often
- give the laptops to the older kids that need them (grade's 11, 12)
- make it so we don't have to pay as much when we break them.
- giving us ones that work better, don't break down as much and if we used them more in classes
- if the teachers used the laptops more in class.
- If they could make them work better I think it would help.
- Just simply use them more.
- They could give more time to students to use the laptops, and let us use them more.
- not sure
- make us use them
- If we actually used them it might help a lot.
- they could get us to use them more.
- let us use them more.
- Use them more for assignments.
- let us use the laptops more in class
- For one thing they could actually use them in a classroom setting.
- to let us use the laptops more
- There isn't much that the teachers could do to help improve it except try to involve them more.
- To improve the laptop program, teachers could use the laptops a lot more, and find new and interesting ways of using them.

What other changes would you make to create a successful LAPTOPS program?

- extra batteries for every one
- Get writers because too many people are goofing off or... make sure you are monitoring closely or... make sure you have people backing up.
- another battery for each person because it is really had to charge in class
- nothing I think it's going good. but if I had to say another grade would be nice. like grade sixes. because they aren't ready for laptops when they come into grade seven.
- put more games on and improve the server
- get laptops that are more tough and sturdy. these ones are not very teen-proof.
- Install the programs which Mrs. Green will undoubtedly tell you we need (like scanner stuff [and MSN])
- I would make the server space a little bigger and the internet faster
- maybe better ones?
- high speed internet
- only using the laptop strictly for work use only.
- Limit internet use.
- A higher quality of laptops with more useful programs such as Encarta would be helpful
- bigger
- The cases need to be changed because they are just way to big and bulky for us to carry around.
- Get newer laptops.
- have ones that don't break all the time.
- Use them more often and not being careless with them.
- just lend them out like the teachers come and sign out a group of them instead of taking the bigger risk of the kids having them all the time.
- new computers.
- Keep them in bags that fit in your locker.
- the laptops working better
- Spending more time on developing computer skills
- I would try to use my laptop as much as possible and report to a teacher if something was going wrong with me or another student.
- use them more
- Some more laptops could be issued.
- If we had better quality laptops they would have been great just how they were. And also more compact laptop cases would have been nice.
- Renew the laptops so that they don't get to the point where they are to old to work.
- Use it more often, Have them work, they were to old and slow.
- Get NEW laptops.
- Be careful to not drop them.
- If the laptops were the newest in technology, so then we wouldn't have as many problems.
- Buy new programs

- to not have a laptop
- let us use them, not always abuse the opportunity of having them.
- Probably, more advanced/stronger virus catchers because many people were catching viruses. Also, we should have smaller cases to fit in our lockers so we won't have so many things to carry.
- put in better programs
- I would get the small cases back so that they fit in your locker and people didn't have to carry them everywhere and have them be used more.
- I would make sure that the laptops would work properly for a long period of time without having to shut down or erase all of the work we have done. Also I would change the body of it so that they wouldn't be as fragile and use them more during school hour
- I would want to have a CD-ROM disk drive.
- Newer technology, and some added features.
- get more programs on the computers such as video explosion
- use the laptops more.
- make it so we can have a cd rom on it.
- constantly checking what people are on, always looking out for a friend and that when they are on the internet. and saying something if they have been on something bad or inappropriate.
- make it so the kids cant get on bad web sites
- If they weren't so slow I think it would help.
- Faster and less breakable.
- I would make more time for laptop use and doing more homework on them.
- not sure
- a different make of laptops
- had a better laptop
- Use them in school.
- use laptops that brake less.
- they get damaged too easily.
- Laptops that have more memory, and don't break down as often.
- I would get a different company to supply the laptops , because HP makes them easily breakable and we have to pay for the damages.
- maybe a little less restriction
- More programs like flash and have us use them more.
- to improve the laptop program cases that fit in our lockers would be nice, and a stronger, more reliable system. More freedom on the laptops would create more room for learning to use them.

Use the space below to describe how laptops have improved your learning. If you don't believe this to be true, describe how laptops have not helped your learning.

- They get you of task

- Nothing has changed other than I have e-mail and that I e-mail my journals that is it!!!
- by spelling because I can't spell very good
- I have been able to type better and find information a lot faster. I have not been able to write as much.
- I think the laptops have helped with the help of the internet and people finding out stuff by themselves instead of asking the teacher!
- they have helped me with my comprehension
- Laptops have improved my learning because they give me more resources, and a quicker way of note-taking (after some typing-practice). If I want to type an essay, instead of always doing a written first-copy and then typing the good copy, you can type both and only make the appropriate changes on the computer. This would save time and give you more time to do other assignments.
- this year my laptop could not get onto the server at all! I couldn't even hard wire. I had to save all of my stuff on a flash memory card and then use someone else's computer to print.
- I occasionally get distracted but I've kept my grades fairly consistent
- they helped my learning because it's easier to find files and documents that you need to study
- They have helped me become a more organized student. Having all my different subjects sorted in different files keeps my work more organized.
- It has helped me become more organized and I believe I will greatly get skills from using a laptop
- its made research easier so I can get assignments in faster
- I think the laptops and both improved my learning and negatively effected my learning because they allow me to get my work in on time but at the same time they also distract me.
- "I believe they have help me because I can do my work so much more efficiently with the laptop.
- I am neutral on this subject because it has neither improved or degraded my learning.
- They just don't help you do work because they are a distraction
- easier taking notes
- yes
- they don't help my very much
- They have made it easier and more up to date for learning.
- "They sort of do we didn't do that much work with them
- I learned how to handle laptops and computers.
- They helped my learning by all ways being there when I needed to access information to help me learn.
- as I said before they have let us access the internet easier
- they haven't.
- They didn't help because we hardly got to use them.
- we didn't use them that much
- They haven't helped my learning because they are just another thing to lug

around.

- Laptops have NOT helped my learning because we never used them to do much work. I think that the students just used them to play games and go on the internet and check their emails...things that you don't need in a school.
- the laptops have helped my learning in some ways but in others they have not. they have helped with typing skills. they have also helped me improve on my research skills. they did not change my marks or the way I do stuff on the computer.
- They can be a distraction, but they help a lot.
- The laptops improved my learning by making computer technology readily available for me to use.
- They were not helping.
- It helped with research on the internet. And to type out things and print them off.
- The laptops were too slow so it wasted class time so I didn't learn as much.
- They have helped me learn by the speed.
- The laptops did not really help with my learning because I never really used it. Plus, we couldn't use them much in class, because not everyone had theirs because it wasn't working or it was getting fixed.
- Got to read cool stuff on the internet.
- they have not helped my learning at all, because I spent so much time on it doing other things that I didn't have any time to do work and focus on school
- it hasn't really, only for researching stuff.
- Laptops haven't really helped because we barely used them. The only time I think most people used them the most is when they were at home, after school.
- well it made learning a lot more fun and students were able to find things a lot faster
- They have helped my learning some-what, because I could go on the internet and my assignments could be done a little bit faster and neater
- The laptops have not helped my learning because they took to long to start up and get to a program so you wouldn't have a lot of time to work during class and would have a whack of homework because of the laptops.
- I have improved in my typing, I can type a lot faster than before.
- I don't believe that they have helped my learning, but I also don't believe that they have taken away from it. When they were working, most of the time they were quick sources for good info.
- the laptops have not helped me learning
- they have not improved my learning. they were just a pain to carry around and there was always something wrong with mine. we didn't use them very often either so it didn't have much effect on me.
- they haven't helped me improve my learning because we didn't use them much.
- they have improved a little bit in which they were something that you learned new things on and yet at the same time they we not helpful because they always broke down.
- I don't think the laptops have helped because the teachers haven't used them much and they are always braking down.

- They didn't help learning because we never used them that much.
- On most days they just came with us to school and went home with them, nothing more.
- They have not helped myself learn very much because most of the time I used them for playing games.
- the internet is a good be on the laptops
- it has helped me by learning how to change different settings and learning how to use the internet
- they didn't improve my learning the slowed me down because I had to worry about carry that and all my books.
- It gave me more access to new age information, current events, and research tools.
- they have not helped my learning because I am not good on computers and they always brake down.
- yes they have helped with our learning because we have learned how to type faster and how to work with technology
- I think that my learning has stayed the same because we did nothing on our laptops.
- they have helped our learning
- "The laptops have improved my learning by improving my typing skills which helps me get homework done way faster than what I could do with my old typing skills.
- I find that the laptops didn't make much of a difference for me
- They helped by giving more freedoms and the ability to research freely
- they have improved my learning by saving time, and creating more possibilities for learning.

Please use this space to vent! What was wrong with the laptops program or what changes would you make if you were in charge?

- nothing it's going really well.
- they brake down to often
- My laptop was messed so I didn't use it as much as I would have liked to (one of the many problems is that it has to be plugged in whenever it's on and at my school everyone unplugs everyone else's laptops "for fun")
- "I wish these laptops had batteries that lasted longer and to have more server space and to have the stupid people who repair laptops faster so I don't have to keep charging my friends battery because the stupid people wouldn't fix his charging problems.
- die laptops die mwahahahahahaha"
- the bezels and the sound isn't to good
- internet
- I think the program is good. :)
- the laptops have too much problems with hardware and not enough software for

use.

- bigger and better laptops
- They were too old and the packs they were in were too big to always be carrying around.
- I would change the fact that Jr. high had them it would be better if the Sr. high had them because they would use them more.
- They broke way too easily!
- they were very expensive.
- they kept breaking and staling.
- The laptops usually don't work.
- they didn't work when we needed them to
- If I were in charge, I would make the laptops more durable for students, and I would make the cases smaller. They broke down lots and the students had to go without laptops for long periods of time.
- the laptops BARELY EVER WORKED we hardly used them. and when the school was telling use not to use so much paper we could have done every thing on laptops and not had to worry about paper.
- They have too many problems, but they can work fine.
- If I was in charge I would get the students the same kind of laptops that the teachers got so they were more heavy duty.
- they didn't work when you needed them. I would buy new ones every year or get ride of them.
- I would try and get them to work faster, log on quicker, and use them more. Go back to the smaller bags to carry them in.
- The internet is slow and every thing else is slow. The cases are too big.
- They were very very slow.
- I've said it more then once, we never used them! They weren't that good because they didn't work so well, I would have used it more if it was a newer computer.
- It was too slow. Buy new programs.
- I don't think laptops are that great at all, they were barely used
- we hardly use them and they can break easily if misused.
- I don't know, they caught viruses easily, we didn't really use them, and I know they most likely cost the school a lot of money, but I believe we are better off without them.
- nothing I wouldn't make any changes except better laptops
- The cases were too big and always got in the way! They had a lot of technological problems with them, they weren't as indestructible as they were said to be.
- They were always slow, it was just easier to use the lab because they were so much faster and way more reliable, and the teacher knew that everyone would have a computer in the lab. There was always at least 2-3 people in the classes that didn't have laptops
- getting more learning programs on the laptops.
- I would not have the laptops program if I were in charge. its a waste of money because the student never get to use them. they are always braking down and junior highs are no that responsible to be carrying around a \$1,000 machine.

- " it usually would not log in much and you couldn't always get onto the internet.
- I would make them so they all had a carom and have more programs on them "
- they always broke down, stopped working. always having to get repaired and they were expired and getting really slow.
- the laptops were to big to hall around
- I think we didn't use them very much because they didn't work very well and there was always some people who didn't have them because they were sent away being fixed.
- The laptops were quite slow and not for any other reason that for work purposes, that rule is okay but we never use them.
- I would put more programs that would be useful to writing better documents and doing videos. The laptops would always break down and they would take forever to get back.
- the laptop were to slow
- they were always broke down and maybe if we had a better laptops it would of been better.
- when they were being repaired they took forever to get back so that you eventually almost forgot about them.
- I would try and use them more for assignments, more memory.
- The laptops broke way too easily they should have been better made , I didn't like the way the laptops were used and the security measures weren't needed.
- the laptops kept getting broken and that they never worked.
- I would have them have newer better equipment and not breakdown as much
- although the laptops are a good thought they were far too breakable and clumsy for the lifestyle of a junior high student.

What was right with the laptops program and any other thoughts you would like to add.

- You stopped people from being able to download games (within a
- I like how we all get them in Div 3 I would have to keep it going.
- I don't know
- it is very fun having one though
- I love having an organized electronic filing system and internet resources
- repair them faster please because it's just annoying when you have to wait 3 weeks for a repair that takes only 10 minutes
- I think the laptops need to be updated.
- They we usually in good shape, and they did teach us some skills like typing and stuff.
- it was right to have them because we have learned a lot computers wise and we never had any problems with the other classes wanting to share the computer lab!
- They were good when they were working properly.
- they broke down to easily.
- some didn't brake down.

- they were in good shape
- We improved on our computer skills.
- it was a good experience and I no a lot better skills about computers.
- They had a good idea with the laptops program by making the laptops easily available.
- I would like a faster laptop and then it would be better
- They connect fast to the internet.
- At least had a program.
- the laptops were annoying, and they just got in the way of everything else, I think that carrying a backpack is enough and takes up enough room in my locker. and the laptop cases wouldn't fit in the locker! so they had to be carried everywhere. they weren't
- It was kinda cool to have laptops for a while...
- "the laptops were a much better idea for students to learn a lot faster and to be able to process things a lot easier
- I liked having them except they were a pain to carry, the backpack was too big. The power cord needs to be stronger. (less likely to break) I would enjoy having them because it is a neat program.
- It was a good idea, but I don't think that it was thought out fully or thoroughly enough.
- paint and power point was a good learning program because you can create animation
- it gave us internet access and do learn how to use the programs. we learned stuff that people in college learn. some parts of the laptop project were good.
- you could get to use them in class instead of always going into the computer lab.
- help you learn your way through them and some programs you didn't know at the time.
- it was easier to get info at home because they were easy to finish assignments at home.
- You could do research on the internet and use them without having to go to the lab
- It was neat just to have them when no other school did except for one.
- The laptops were good for doing homework at home and looking for information on the internet.
- the knowledge of using a computer
- they improved our leaning
- It was an easy access to the internet and it was better than just having the old desktops.
- I got to know the internet better.
- The idea was a good one, it just needs a little more refining