A Project to Conduct a Needs Assessment for the Implementation of a Virtual School for the Victoria Christian Education Society

by

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PURPOSE

To conduct a needs assessment for the implementation of a virtual school for the Victoria Christian Education Society (VCES). VCES is the governing body for Pacific Christian School (PCS). It is the intent of this research to present the VCES Board and administration a recommended timeline and format of delivery for a virtual school based on the needs assessment outcomes.

BACKGROUND

The rapid development and decreasing costs of communication technologies (microcomputers, Internet, World Wide Web, satellite links) are affecting the delivery of education and expanding its potential audience. Students can access any part of the world to explore geography, history, culture, religion and more. Teachers can access numerous resources to assist them in teaching their subjects and topics. Teachers and students can communicate orally and written to peers in different countries.

Pacific Christian School (PCS) is considered a large independent school with a student population of 730 (K-12). PCS serves families that attend a variety of churches in the Greater Victoria area. As a large independent school, PCS is expected to be a leader among its fellow Christian schools in this new information age. All independent schools exist to serve a certain clientele, which puts them into direct competition with other independent and public schools. In order for PCS to maintain its share in the marketplace, PCS must be on the leading edge of technology implementation. Other larger independent schools are currently looking at the implementation of virtual schools. This has put pressure on PCS to look into this technology for its school community and beyond that community into areas outlined below.

The impact of technology on the programs and services provided by PCS could occur in the following areas:

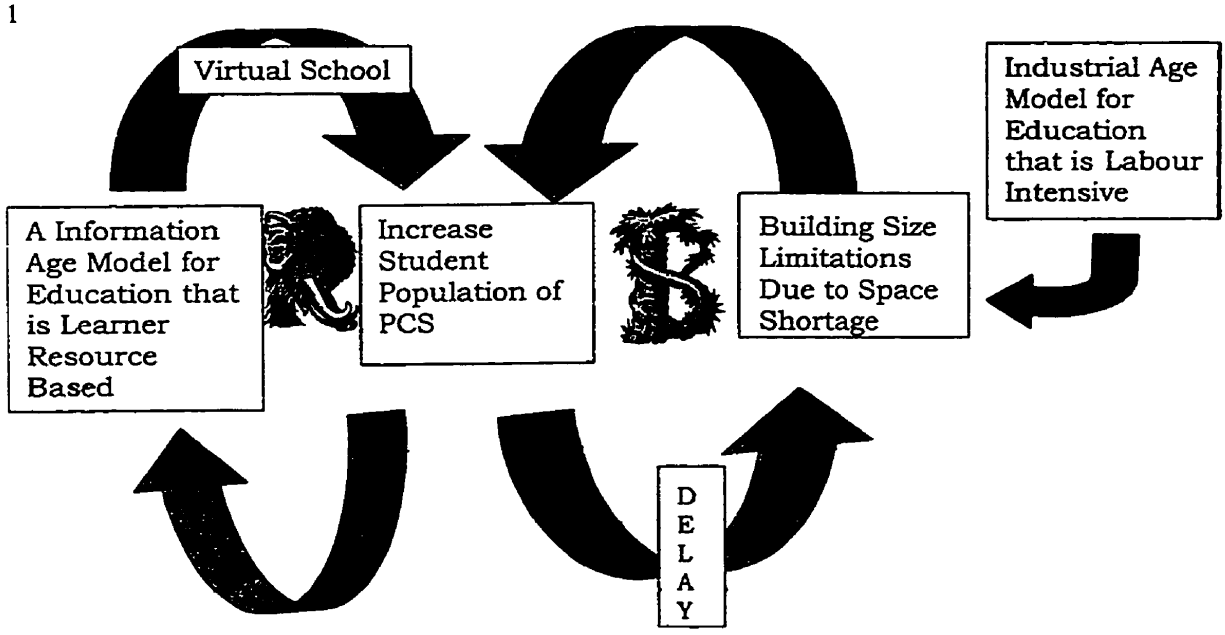
- Establish a global delivery model of Christian education
- Establish an affordable link to homebound and homeschooled students
- Prevent loss of current and/or potential clients to other institutions that offer virtual schooling

The "Information Age" has already been ushered in as we near the 21st century. This requires a shift for education away from the current Industrial Age model of formal education delivery. The old organization is only open for ten months of the year and has mandatory attendance from 8:30 – 3:00 daily. The new Information Age model of education will require a more fluid organization, one that can be accessed 24 hours a day, 365 days a year, and be attended when the learner is able. This shift will be significant for learners, parents, teachers, and administrators.

The technology used in the world of adult education is now becoming affordable enough to implement at a K-12 level. The whole area of virtual schooling at the K-12 level is so new that many organizations are entering this realm without first investigating the literature that informs us how to incorporate change into our organization successfully. There is a systematic approach to managing change that is required to permit successful transition into this new realm and create a learning organization.

One such approach to this issue would be similar to a "limits to growth" (Senge, p 97) archetype:

figure 1



The model in figure 1 above shows a pictorial view of systems thinking that Peter Senge outlines in his book "The Fifth Discipline"(p97). The archetype depicts a reinforcing loop and a balancing loop. The balancing loop outlines the traditional model or existing model that is not working or not giving the organization a desired outcome. The reinforcing loop outlines a new approach to obtain the organizations desired outcome.

The reinforcing loop in this model is depicted on the left side of figure 1 above. It consists of a new Information Age approach for education that is learner resource based. This model suggests education money on the learner rather than the traditional avenues of the current Industrial Age model outlined on the right side of figure 1. Coming out of this reinforcing loop is a virtual school environment. This new environment could allow more money to be spent on the learner and bypass the traditional impediments or delays. This bypass permits growth at PCS, without the traditional delays associated with school construction.

It is in the balancing loop that the slowing action occurs in an educational organization. In the Industrial educational system, the slowing action or delay is the space required to facilitate more students. For instance, building size, classroom space, playgrounds are all examples of physical limitations. Tied into this balancing loop are the limiting factors. In this system, the limiting factor is the industrial model for education. This model relies on the current methods of facilitating growth via spending education dollars on people. This process is burdened by capital costs, large employee salaries, and the time lag of building.

By following this systems approach, PCS could increase its student population without falling into the pitfalls of current educational organizations.

Significance

Other large independent schools (Pacific Academy, NorthStar Academy) have started to solicit a virtual school clientele. PCS fears a loss of potential and or current clients if it does not pursue this endeavor.

Developing a virtual school program is a formidable undertaking. It is not to be looked at as simply creating a Web page and proclaiming that the organization is now ready to teach school virtually. Peter Senge's book the Fifth Discipline (1990), suggests that certain principles apply to this situation in the form of laws written in his book. For instance, the law of "the easy way out usually leads back in" applies to those schools that are merely creating a virtual system without doing a needs assessment or an environmental scan. They are simply applying technology and "hoping" a clientele will occur and following the old adage, build it and they will come. Further, the law of "faster is slower" also applies to these schools that are rushing into creating a virtual school simply to be the first ones and again

"hope" to attract clients. Senge points out, that small changes can produce big results and that you can have your cake and eat it too, but not all at once. The intent of the project is to consider these laws in developing a feasible plan of implementation of a virtual school for PCS, and by incorporating these principles into a plan of action.

The Organization

The Victoria Christian Education Society (VCES) is the governing body of Pacific Christian School, which was established in the city of Victoria in 1960. The society was established to provide an educational service for its members, congruent with their values, ethics and beliefs. The first school went through three name changes. First it was called Calvin Christian School, secondly Saanich Christian School, and finally Pacific Christian School. Pacific Christian School now has two campuses and educates 730 students from kindergarten to Grade 12. The schools' mission statement is; "Pacific Christian School exists to...nurture students in Christ-like living, critical thinking, and joyful service, to become effective members of the Christian community in God's world." The school is multi-denominational which gives it a rich diversity of clientele.

A nine-member board governs VCES. Members are nominated from the membership society that consists of parents that send their children to PCS. The board members are voted in to a three-year term by the society membership. The staff support consists of: one business manager, four secretaries, one building and grounds supervisor, two principals, two assistant principals, one program director in the high school, one curriculum coordinator in the elementary school, forty-eight teaching staff members, eight teacher assistants, and two librarians.

LITERATURE REVIEW

This review of literature provides a theoretical foundation for the projects viability. The review assesses the impact of technology on education, explores the social concerns of virtual education, provides a new model for education, and discusses plausible methods of the project implementation.

Impact of Technology on Education

In 1840, Phillips (1998) notes that Sir Isaac Pitman, the English inventor of shorthand, came up with an ingenious idea for delivering instruction to a potentially limitless audience: correspondence courses by mail. Distance learning in which instructor and student remain geographically apart has expanded as technology has permitted since Pitman pioneered it. His initial model of distance learning via mail correspondence has evolved into distance education via computers to today's online learning agencies. The rapid development of online learning caught the attention of the business community as a viable and highly effective medium for employee training and upgrading skills. Phillips goes on to say that the most attractive side to online learning is its low cost for delivery compared to course tuition, training materials, employee travel, meals, lodging and time spent in transit and away from family. Online learning allows freedom to the learner. Course work can be done any time, anywhere, provided there is an Internet connection.

Authors such as Imel (1996) reflect the increasing interest in the potential of current communication technologies to alter traditional teacher-student relationships. Four possible scenarios afforded by new communications have been offered: the minimal change model (educators use technology as an instructional aid without making any fundamental changes in the delivery of distance education); the marginal change model (the pedagogy and organization of education remain unchanged and students are added to conventionally taught classes); the systemic change model (distance education is reorganized into a technology-driven system); and the virtual system (the formal organization of schools becomes minimal or disappears).

In his article, "The Impact of the Internet on Learners and Schools", Peterson (1996) points out it has been observed that young children pass easily between "real" and "virtual" learning situations. Online learning features much more independent learning and far less teaching, with students often setting the learning agenda. Administration and teachers have to deal with a paradigm shift since learners are now roaming the globe and not just a campus. Peterson continues by explaining that for the teachers, online learning means a shift in delivery and assessment approaches. Teaching online involves independent activity on the learner's part, which is a shift from the mass learning concept of the Industrial Age Model. Teaching online is reactive by responding to the teachable moments created by the learner. The students can disappear with the click of a mouse causing attendance to be voluntary. Principals are no longer up against the best in their area but are up against the best in the world! Another shift for principals will be to

develop new strategies and criteria for evaluating this new Information Age teacher.

Technology is slowly becoming more and more affordable, but school budgets are not increasing and schools are finding more costs in support and upkeep of the technology. This diminished funding and computer competition foster the development of teaching and learning methods that can reach a wider market and that do not involve expensive commodities such as lecturers and classrooms. In schools, the role of the teachers broadens to include less authoritarian practices. Consequently, the dividing line between them and the learners will become blurred as teachers and learners become "fellow browsers in the cybernetic library"(p67, Rose, 1996).

McCartney (1996) points out that another benefit of online learning is exposure of students to many of the challenges they are likely to encounter in the real world. It also exposes them to students from different disciplines, different cultures, and certainly different perceptions.

In education, there have been a number of recent articles and papers claiming that the traditional university will soon be obsolete and unable to sustain itself financially in the presence of efficient and rapid information delivery systems. Futurists and scholars claim that the sheer capital of the universities with all their buildings, parking lots, residences and non-instructional staff will bring them to their knees when the virtual organizations of the Internet emerge as the more flexible and effective way of educating students (Taylor et al., 1997).

Berman and Tinker (1997) list several advantages to virtual education in their article "The World's the Limit in the Virtual High School". Virtual High School provides four benefits for schools and students. First, it significantly expands curricular subject availability. Many high schools cannot offer advanced or specialized courses because of enrollment being too low to economically justify the course. Through Internet courses, however, small groups of students at a number of high schools can fill these courses. Second, it provides technology-rich learning. Internet courses give students experience in telecollaboration and the use of software tools in the context of serious academic instruction. Internet courses provide learners experience with e-mail, online working groups, and online conferencing. They challenge students to learn to use the medium to communicate well, present data authoritatively, and demonstrate effective research skills. Third, the Virtual School brings unprecedented resources to the learner. Students learn to access the wealth of data on the Internet. Students can take their learning far beyond textbooks into the real world of open-ended problems and unanswered questions. Finally, Virtual High Schools enhance teachers' skills in technology that can extend to their regular classroom instruction. There is

probably no better way for teachers to become adept at telecollaboration and using a wide range of software tools than to make daily use of them in their instruction.

There are other areas to consider when analyzing the worth of online education. The socialization process that schools provide, needs to be assessed. A fear exists that a virtual school could not provide the socialization that a student requires.

Socialization Concerns of Virtual Education

In his article "The Bermuda Triangle of Education", Bertrand points out that the information age has ushered into the pedagogical triangle of teacher, learner, and subject matter, a fourth element: the communication system. Each part of the triangle relies on a very important cultural component. Problems occur when communication processes in a classroom are fragmented and related to different cultures and ideologies. There is quite a chasm between the school's and the students' culture. The information age brings with it children that are proficient on computers, and a need for virtual education. Key factors to achieving this virtual model are: use of inductive curriculum based on real social and cultural problem solving, student involvement, empathetic communication between students and teachers, and teacher emphasis on empowerment of students rather than control. (Bertrand, 1994)

Religious educators charged with the formation of mature Christians, will want to consider the losses as well as the gains of technology. The potential diminished student-teacher relationships, the loss of real tactile experiences and lack of real face to face experience, a lack of coherent narratives, and the loss of students' inner voice of reflection are all areas of concern. Technology can cause the loss of human interaction. The catechetical implications of the loss in teacher-student relationships are such that the relationship is focused onto a screen rather than the interpersonal dynamic. "Similarly, should the catechist become merely a facilitator of the acquisition of computer skills instead of being a witness to faith, the student will lose the opportunity to experience faith as a personal relationship with God mediated through others"(Campbell, p 29).

A similar argument is given that computers are the cause of children's loss of self-expression experienced through the use of crayon, paint or scissors. Computer-mediated images hide the narratives identity of culture as they are told, retold, and assimilated in the language of metaphor. Inner speech

develops in a social context as children learn to use language, to think out loud and then to reason. Campbell says that students whose brains have been overprogrammed and bombarded with too much computer noise might have problems in abstract reasoning and coherent writing because the mechanics of inner speech have been insufficiently developed. (Campbell, 1996)

Another socialization factor to consider is computer access in relation to family income. A 1996 Statscan study showed a correlation between access to computers and the income a family earns. The study showed that 50% of households with incomes in excess of $70,000 have home computers, compared with 11% of households with incomes below $15,000. Canadians who are poor or have limited education have far less access to computers than the more affluent, creating a worrisome gap between rich and poor. In her November 1, 1996 *Globe and Mail* article, Jennifer Lewington quotes Veronica Lacey, chairwoman of the education committee of the Federal Informational Highway Advisory Council as saying; "the computer gap between rich and poor Canadians is widening where there was once hope that the Information Highway would be the great equalizer of the "haves" and the "have-nots"". The issues of information access to computers, and the Internet is a real problem for society to face in the Information Age.

Not everyone believes the fix for education is in terminals and modems. Hancock says, ""I think the possibilities of technology and home schools are greatly exaggerated," says Dr. Patricia Lines, U.S. Department of Education policy analyst. "Technology will never replace the pupil-teacher relationship""(p 67). While the debate continues, the numbers point in one direction. The National Home Education Research Institute in Salem, Ore., estimates that about 1 percent of the US's 50 million school-aged children are learning at home. The number has grown 15% a year since 1990. So what would a new model for education look like? This new model would be based on the information age our society is now in (Hancock, 1994).

An Information Age Model for Education

Futurist Alvin Toffler (1980) has written about three waves of civilization. In the First Wave, agriculture enabled nomadic peoples to settle into villages and cities. In the Second Wave, the industrial revolution made possible the modern industrial state. The Third Wave has begun in which computer and communications technologies will transform the national and global economies into information-driven economies. The Third Wave is triggering the Information Revolution which will have political and societal impacts

every bit as profound as those of the First and Second Waves.

Targowski states that from the 1970s-1990s, the computer and communications revolutions have provided the tools for the development of a New Information Civilization. A set of these tools includes: information technology (computers), telecommunications networks (satellite, fiber optics, telephone), and television (video). This set of technologies can be called telematic technologies. They transform the material civilization into the information civilization, which becomes the dominant force of humanity. This new civilization brings about new modes of human activities and a new vision of the humanity development. The 19th century eliminated wilderness via railroads. The 20th century developed science and technology which cause the Planet to fall apart and fragment along tribal and sectarian lines. The 21st century is viewed as one that will implement the mass-enlightenment, which will integrate the world commercially and culturally as a New Informational Age dawns. (Targowski, 1996)

According to Targowski, the purpose of the Information Civilization is:

- To optimize operations and development of the material civilization in order to minimize the use of resources (including the ecology), to increase consumer choices of innovative and quality products and services, and to improve customer satisfaction;

- To sustain the development of human cognition in order to make aware and wise decisions about: the sense of human possibility, life education, politics, defense, business, entertainment, and leisure time.

The Information Age and societal pressure brings a desire for high schools to be available 24 hours a day seven days a week allowing individualized schooling and instruction whenever and wherever a person chooses. Access to the Internet will permit web-based training to occur at school or at home. Inherent in the design of today's high schools is an assumption that students come to school wanting to learn. When this is not true, school personnel invest a disproportionate amount of their time trying to compensate for these reluctant students. This is time taken away from teaching those who come to school wanting to learn. Educating disobedient, unmotivated students outside conventional high schools will significantly improve attendance, discipline, and student performance for everyone. The information age will cause these resistant learners to receive their high school education in a setting where their behavior cannot adversely affect others (Edwards, 1995).

In instructor-led web-based training (WBT), the instructor plays a critical role serving as both mentor and humanizor. By drawing participants out and encouraging them to share their insights and experiences, instructors

personalize what is often a sterile experience. Classroom instructors have their own instructional tricks, and on-line instructors must learn some new ones for WBT technology. Several approaches to WBT include: threaded instruction, chat rooms, e-mail, and HTML (a web page computer programming language) -slides (Pritchard, 1998).

What does an Information Age school look like, and how do we begin to create such a school? Vicki Hancock (p60-63) addresses this in her article "Creating the Informational Age School". Hancock points out six characteristics of an Information Age school:

Interactivity: students communicate with other students through formal presentations, cooperative learning activities, and informal dialogue. Students interact with various community members, businesspeople, social service staff, athletes, and older adults, enhancing their curriculum of studies with authentic information from primary sources.

Self-initiated Learning: students that initiate their own learning participate in productive questioning, and seek information they can use rather than wait for the next question on a test or from the teacher. Students learn to analyze and interpret information in the context of the problems or questions they have identified.

Changing Roles for Teachers: To develop self-initiated learners, the teacher must move away from being a dispenser of knowledge and move towards being a facilitator and coach for the students.

Media and Technology Specialists: Teachers need to incorporate these types of specialists into the student's curriculum. These specialists provide familiarity with the community's information resources and can direct students to sources relevant to their investigations.

Continuous Evaluation: Evaluation must take on a multifaceted approach. Teachers need to evaluate information sources and their relevancy. They need to evaluate the quality of presentations and interactivity of students.

Changed Environment: Information Age schools look and feel different from the traditional Industrial Age school. Information technologies encourage students in experimentation and research activities.

Interdisciplinary problem-based learning is ongoing. Students venture out into their community and deal in real life applications of learning. Teachers must lead students in the acquisition of informational literacy and technology skills. (Hancock, 1997)

Technology leaders are those who see technology as a central tool for transforming teaching and learning. Bailey and Lumley (1997) have argued that technology leaders must possess several skills, including the following:

- Leaders must be able to model technology use.
- Leaders must be able to get along with other people as they learn to use the new technologies.
- Leaders must understand how to integrate the technology into all disciplines.
- Leaders must understand how important training is to those using the technology.
- Leaders must understand the "big picture" as they work with others to use technology to transform teaching and learning. (Bailey, Lumley, 1997)

This new leadership style will be needed in the Information Age school house.

In my comparison of the old and new models for education, the following table describes the differences:

Industrial Age	Information Age
Labour intensive: 95% of a typical public school's budget goes to staff. Only 5% of a typical budget goes to Capital such as books, software, computers. Transportation intensive: the learner must physically travel to the key educational resource resulting in high costs, geography barrier, no learner selection of institutes to attend.	Capital intensive: educational resources, including individualized instruction are delivered via the informational superhighway, highdefinition television, multimedia PC's and so on (more money for the learner). Communications intensive: learner can access educational resources anywhere in the world any time.

As the table above illustrates, the Information Age school can put more resources directly into the students' hands. However, the social role that schools play as custodial caregivers during the day, will remain intact as long as parents need to work during the day. Despite these nuances, schools will change in the 21st century. Teachers will be expected to facilitate learning to students in new ways in keeping up with advances in technology.

New Approaches to Teaching and Learning

In their article " The World's the Limit in the Virtual High School", Berman and Roberts (1997) state, "One cannot simply transfer a traditional course into the Internet environment. A number of Internet course design

characteristics that match technology and quality of education have emerged." They discuss asynchronous communication, synchronous communication, seminar models, technology – rich instruction, and project based learning.

Internet courses need to make effective use of asynchronous communication that does not require the sender and receiver to be present at the same time. Technologies included in this category are: electronic mail, conferencing and news groups. Synchronous technologies such as two-way voice and video, real time chats, and shared applications can jazz up instructional delivery to students; however, it requires two or more users to be present at the same time leading to time zone barriers in a global delivery model. Asynchronous communication is more adaptable to a person's schedule and usually requires less technology.

Internet courses need to incorporate a seminar model, in which the teacher determines the topic and activities, encourages substantive interactions among students, monitors and shapes the conversation, and promotes an atmosphere in which students respond to one another's work. This model results in more conversation and builds on the rich learning that takes place in groups.

Internet courses need to be more than text –based to hold students' interest. Teachers need to use all available technology resources including digitized images, short audio and video clips, graphics, conferencing, and multimedia presentations. In addition to maximizing use of technology to engage students, Internet courses need to create forms of instruction that actively involve students. Telecollaborations such as whole class projects, simulations, role playing, and real life problem solving are strategies that provide the kind of hands-on engagement that brakes away from a text-based delivery model.

Implementing a Virtual School

Dewar (1996) states that "The perceived pressure on organizations to get courses up quickly can often lead to poorly planned and executed programs". Organizations would be well advised to ask the "Ten Questions Your Organization Should Ask Before Jumping Into Online Education/Training" (see appendix A).

The most critical question for your organization to ask is, " Why are we doing this?" The commonly heard reasons fall into the following 4 categories:

- everyone else is doing it, so we have to
- we will save money

- we need to compete globally for registrations (for educational institutions)
- we're able to deliver training more efficiently

Less frequently does one hear an organization respond with these kinds of reasons:

- we can better meet the needs of learners and educators
- we can participate in an overall transformation of working, living, learning
- we can facilitate a global exchange of ideas and information
- we can break down traditional hierarchical structures and fosters knowledge building
- we can encourage the integration of one's "learning" into all aspects of one's life
- we can facilitate a broader access to knowledge and publishing

Organizations also need to find out how developed their technical infrastructure is. Organizations need to know how to prepare their instructors for change. Can the organization handle the scheduling administration of online education, and do their clients want this change. Once an organization has properly processed these questions, they can successfully implement a virtual school. But how will this technology be delivered to the learner?

Today's technology can combine the best of both worlds: computers and classrooms. The rich capabilities of Web browsers make possible a collaborative virtual environment. Internet-based instruction is bringing people together in new and interesting ways. Advantages occur for the learner and the teacher. For example, travel, inconvenient meeting times, or trying to get everyone into one place at one time are no longer obstacles. (Greengard, 1998)

RESEARCH

Research Methods

This project used a naturalistic approach to research. In this approach one adheres to a strict methodology, but expands the concerns for the humanistic ethics to include strong consideration of the world-views of the participants. A naturalistic study is a qualitative strategy employing inductive inquiry. This approach had no predetermined hypotheses, and allowed understanding to develop as patterns and relationships revealed themselves. The research sought out a variety of viewpoints using the following qualitative methods:

interview, focus group meetings, observation, and content analysis of meeting minutes and survey questionnaires. The research used two focus groups. The first group consisted of potential users of the virtual school: homeschool parents, high school students, and homebound students. A second group consisted of those involved in delivery of virtual schooling: teachers, administrators, and technicians.

The research was evaluated using a holistic model of evaluation to derive usable and comprehensive information (Morgan, 1987). Morgan points out that a holistic model relies on three stages of evaluation. First is information collection, second is comparison, and third is a determination of worth. Holistic evaluation is a value-laden process, and the researcher held the values of PCS in the forefront when the determination of worth occurred.

Data collection involved a number of focus group sessions and interviews with all stakeholders involved in developing and using online education. This approach was utilized to develop flexibility, trust, empowerment, teamwork and information sharing. The process involved appreciating and valuing the best of ""what is", envisioning "what might be", dialoguing "what should be", and innovating "what will be""(p 24, Hammond, 1996).

The above research methodology used a basic action research routine of "look/think/act (p 16, Stringer, 1996)" interacting spiral. The research allowed the researcher to explore the details of the activities through a constant process of observation, reflection, and action.

Data Collection Activities and Timelines

1. User focus group of homeschool parents (October 21, 1998)
2. High School student survey (November, 1998)
3. Focus group of teachers (November 23, 1998)
4. Meeting of technicians and development people (December, 1998)
5. Write first draft of project (December 1998-January 1999)
6. Submit first draft of project to sponsor and advisor (February 15, 1999)
7. Submit second draft of project to sponsor and advisor (March 1, 1999)

8. Penultimate copy to sponsor and advisor (March 20, 1999)

9. Final submission to RRU (April 15, 1999)

Study Conduct

The study was conducted in four phases. The first phase involved the organization of a focus group of parents involved in homeschooling. The president of the Christian Homeschoolers Association of BC was contacted and asked for a list of possible contacts to participate in the study. Eight parents were contacted and an evening meeting was arranged. The group's expertise included combined homeschooling experience of thirty years with children from kindergarten to Grade 11.

The evening started with an introduction to the topic. Distance learning models were discussed from correspondence models to online asynchronous models to virtual synchronous models. The procedure for the evening's discussion was outlined. The focus group was split in half and each group was asked to answer two questions.

Question 1.) If a virtual Christian school was available for you to enroll your children in, what courses would you like to see offered and at what grade levels?

Question 2.) If computer based Christian Education delivery became available, how would we keep our Christian Perspective through this model?

Each group designated a scribe and wrote all responses on flash cards provided. Ten minutes were given for each question. After the given time allotment, everyone regrouped and posted all responses on a bulletin board. The focus group was then asked to group each response into common themes.

The second phase consisted of two parts. Part A, involved input from Grade 12 senior high school students. Arrangements were made to visit each Grade 12 class at Pacific Christian School. A PowerPoint presentation was given (see appendix B) as a method of topic introduction. A question and answer period followed and then each student was asked to complete a questionnaire (see appendix C). Part B involved data analysis of the Ministry of Education 1998 BC Provincial Assessment of Reading and Writing for Grades 4, 7, and 10. The Assessment was done in June and the results were sent to the schools in October (see appendix D).

The third phase involved data collection from teachers. A questionnaire was given to teachers K-12, at Pacific Christian School and Lighthouse Christian Academy (see appendix E).

The fourth phase involved research into feasible implementation of a virtual school. Sites that are currently delivering online education were visited:

- The Open School Learning Agency was visited; the Chief Operating Officer and Director, Distance Education Course Development and ABE were consulted.
- North Island College was visited; the Associate Dean was consulted.

Research Data

Phase One: Home School Parents Needs

A selected group of home school parents was contacted to represent and participate in a study focus group. The study followed the study conduct mentioned above.

Focus Group Results:

Question 1.) If a virtual Christian school was available for you to enroll your children in, what courses would you like to see offered and at what grade levels?

Types of Courses	Grade Levels and Specifications
2nd Language	French K-12 - not many resources available, difficult to teach at home
Math	Grades 8-12 - introducing math concepts - tutoring specific math problems
Science	- be able to watch lab experiments (high school) - offer high school sciences, Biology, Chemistry, Physics

Electives	P.E.- aerobics - teach rules to sports - could you use gym Art – instruction - critiquing
Bible Courses	high school students
Learning Tutorials	- entire Grade 11 & 12 curriculum to enable a student to receive diploma (a better alternative to correspondence school)
3rd Perspective (homeschool parents would like a 3rd persons view of their child's educational progress and development)	- balance out the parents' area of weakness - resource people to provide a list of perspectives from scope and sequence to review and adjust at home to individual situations - testing and assessment

Question 2.) If computer based Christian Education delivery became available, how would we keep our Christian Perspective through this model?

Christian Curriculum:
- committed Christian teachers with experience
- teachers who understand homeschoolers
- role models are Christian
- *Acknowledging the presence of the creator, throughout all of the curriculum
- Christian critique of novels, literature, media, material, virtual teacher provide launchpad for home discussion
- Avoiding the "fighting" other systems offer, e.g., SIDES/public school biases
- no objectionable material
- career options, counseling for CAP from Christian perspective

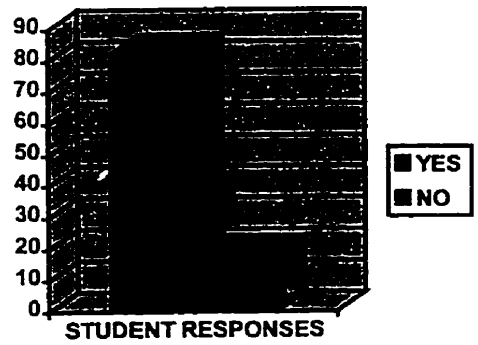
Intentional Interaction:
- chat rooms need a mature Christian monitor
- more interaction, i.e. debates/chats between families and students in our province and in other provinces

Phase Two: Student Needs

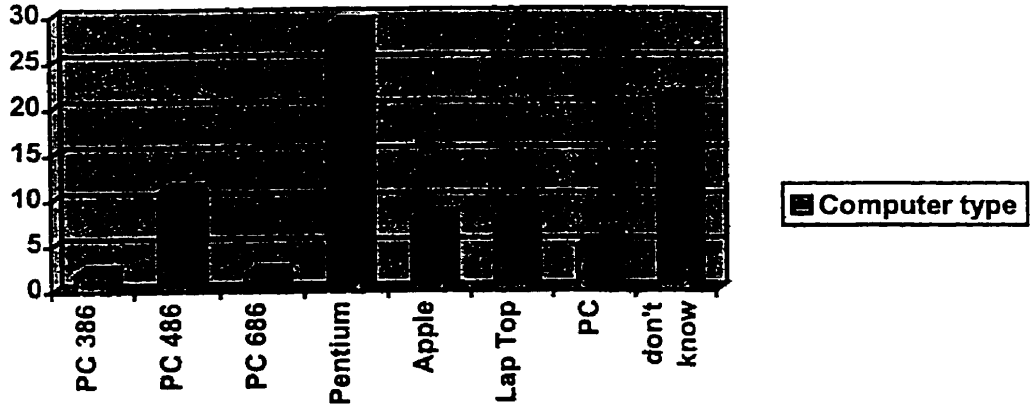
Part A:

Student Questionnaire: The Grade 12 classes of PCS were given the survey to complete. The total surveys handed out were 60, the total returned were 39. The results for each question were tabulated and the findings were bar graphed as percentages unless otherwise indicated.

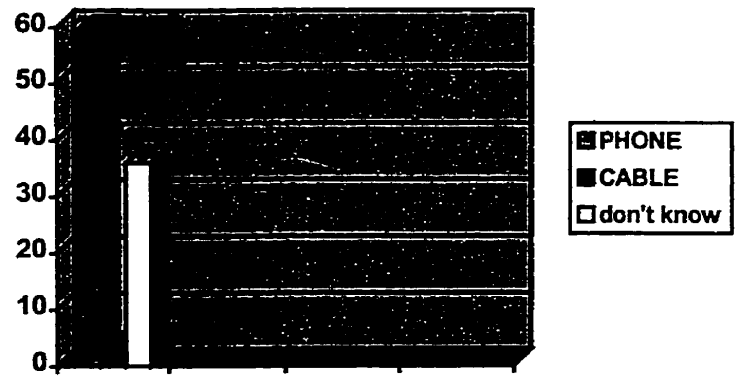
Question 1.) Do you have access to a computer at home?



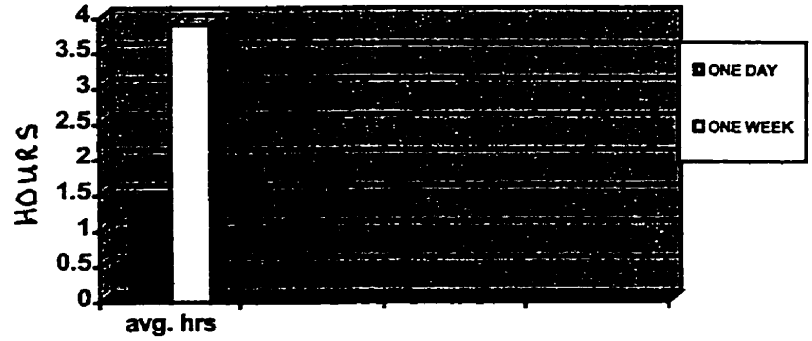
i.) Describe your computer:



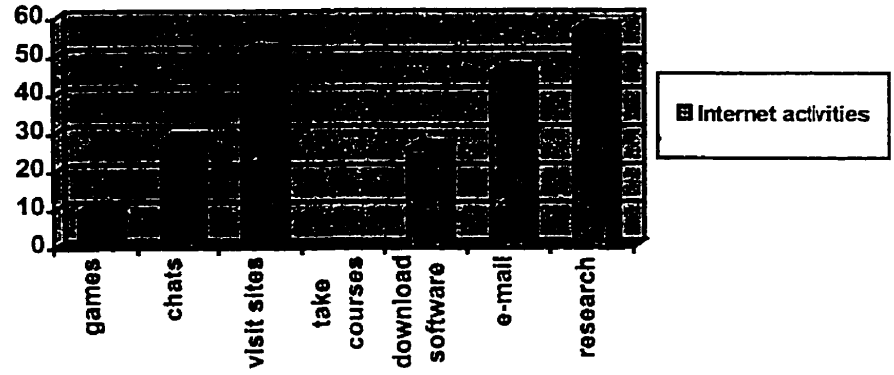
ii.) What is the modem type (phone/cable)?



iii.) How many hours do you spend on the Internet in one day and one week?

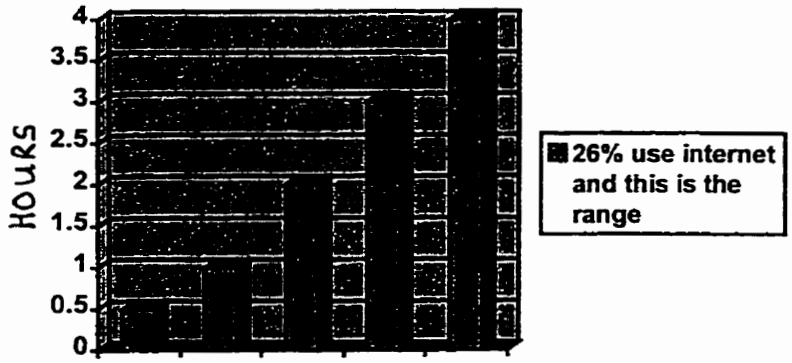


ii.) What do you do on the net?

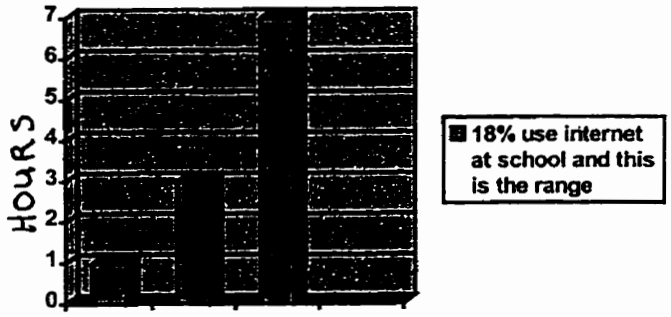


Activities mentioned in "others" include: learn HTML, make web pages and perform information searches.

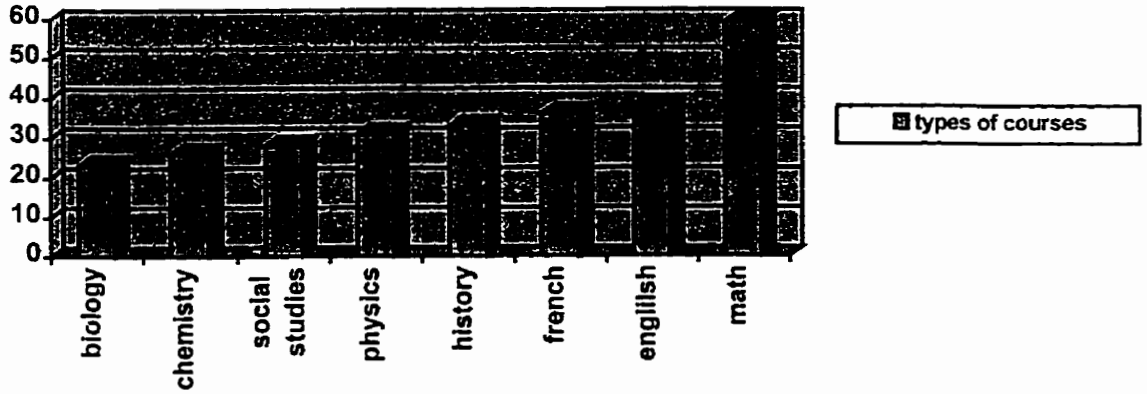
Question 2.) At school, how often do you use the Internet for school research in one week? (only 26% of students answered and results are in **hours**)



Question 3.) At school, how often do you use the Internet for personal research? (only 18% of students answered and results are in **hours**)



Question 4.) Types of courses students would consider taking on the Web:



Types of courses listed under "others" include: Japanese, Computer Science, Law, Political Science, Calculus, Information Technology, and Bible.

Question 5.) What general topics do you discuss during online chats?
Answers varied as follows: game tactics, life philosophy, knowledge of other countries, love, friends, overseas friends, people's interests and where they live, politics, weather, music, software, mock other people on chats, anything, hockey/sports, hobbies, school, appearances, family, Princess Di's death.

Question 6.) Have you ever experienced online videoconference?
Answers were all "no"

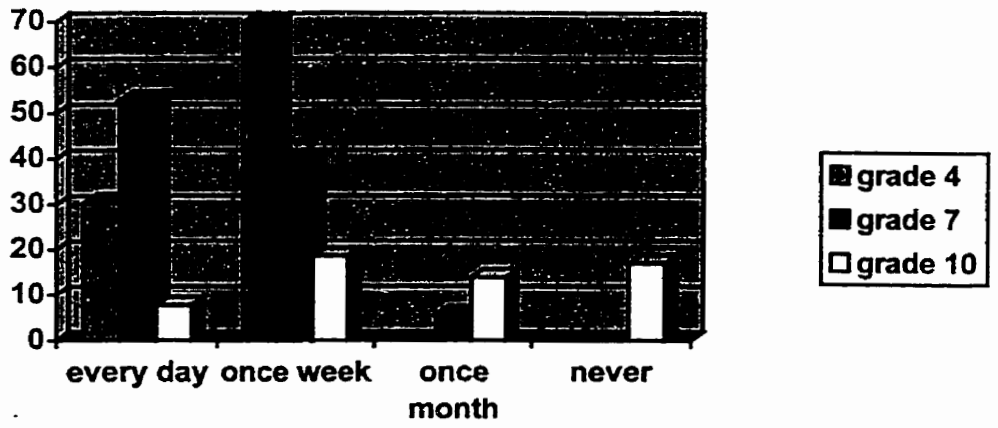
Question 7.) What time of day would you access an online course?
Answers varied as follows: whenever available, 10:00 – 12:00 PM, during the afternoon, 1-3 PM or 12-1 AM, early morning, evening, 10 PM-3 AM, during regular school hours, 4-8 PM, around dinner time, 11 PM-3 AM, 8-11 PM, 8-12 PM.

Question 8.) Rank the following learning styles as 1= favourite kind of learning activity and 5= least favourite learning activity.
Answers were tabulated and ranked (most to least responses):
1= Individual reports / Presentations (collaborative)
3= Group work
4= Presentations (individual)
5= Tests

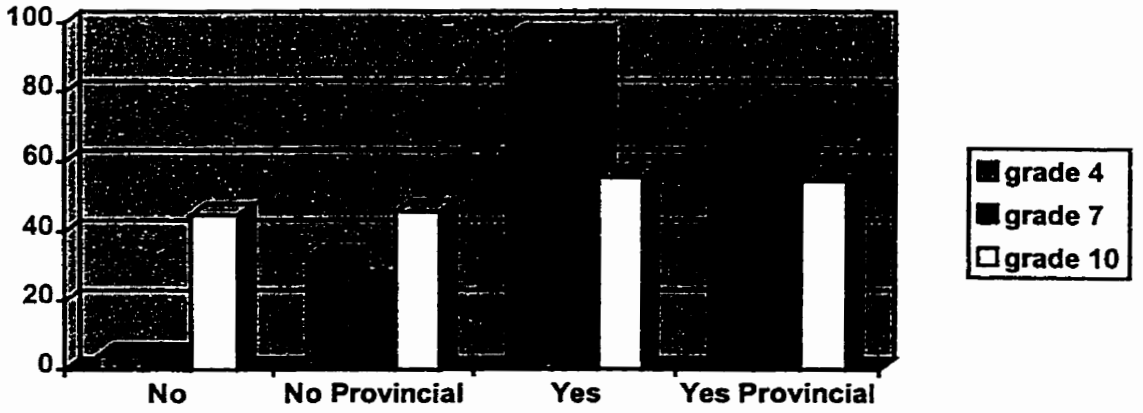
Part B: Comparison to Provincial Norms

Data analysis of the 1998 BC Provincial Assessment of Reading and Writing for Pacific Christian School grades 4, 7, and 10. During this yearly exercise, the British Columbia Ministry of Education requires all students to fill out a questionnaire on a variety of topics. The Ministry evaluates one subject each school year and takes the opportunity to survey students on a number of issues that are pertinent. The 1998 year had several questions on computer use that were asked. The results are given in percentages of student responses. The individual school responses were then compared to provincial school responses. These results were bar graphed for ease of analysis and comparison.

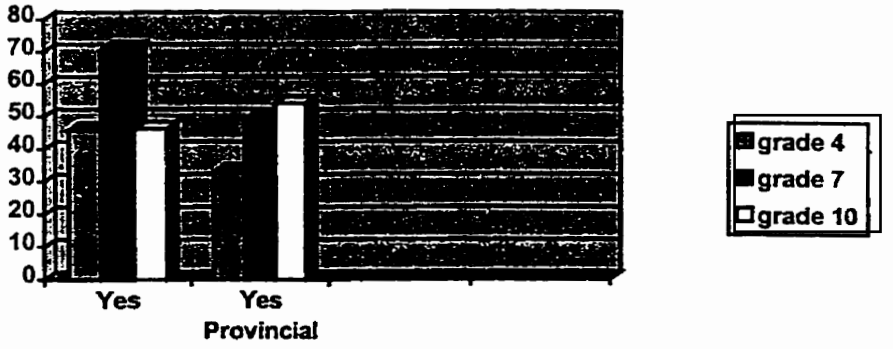
How often do you use a computer at school?



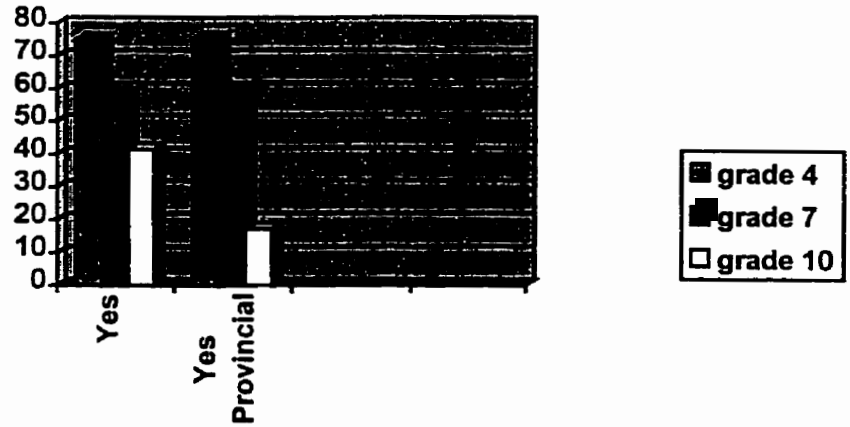
Do you use the computer at school to write or word process?



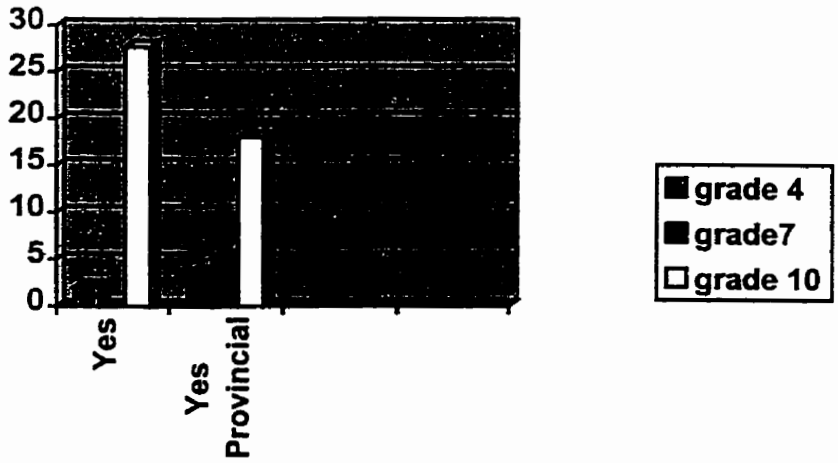
Do you use the computer at school to search for information?



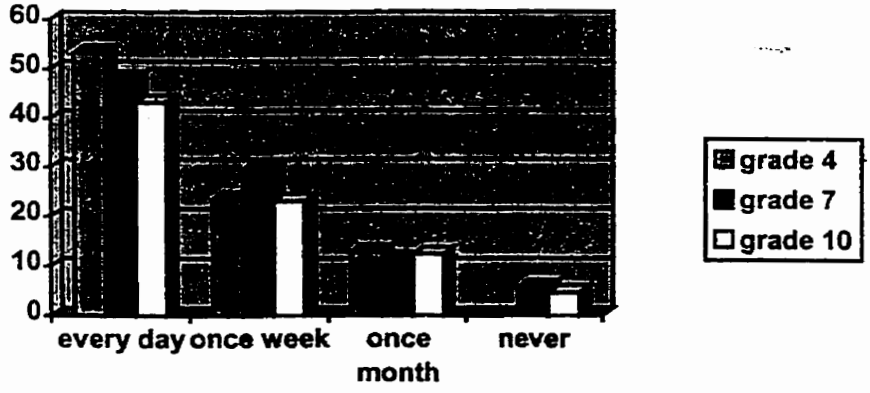
Do you use the computer at school to play games?



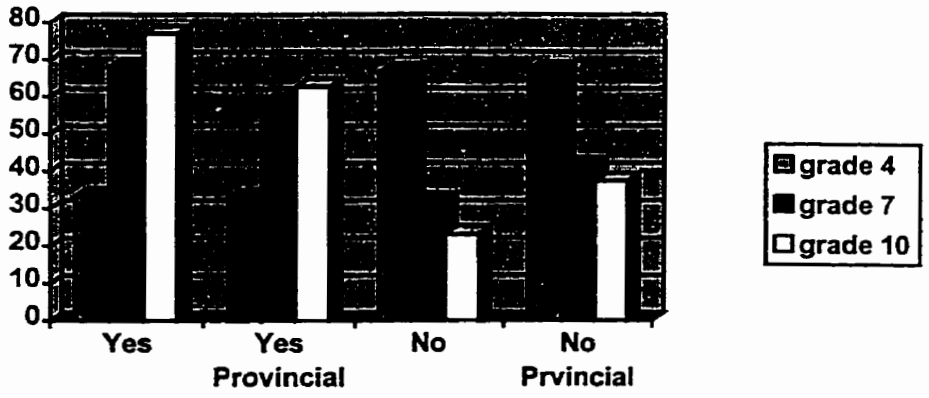
Do not use a computer at school?



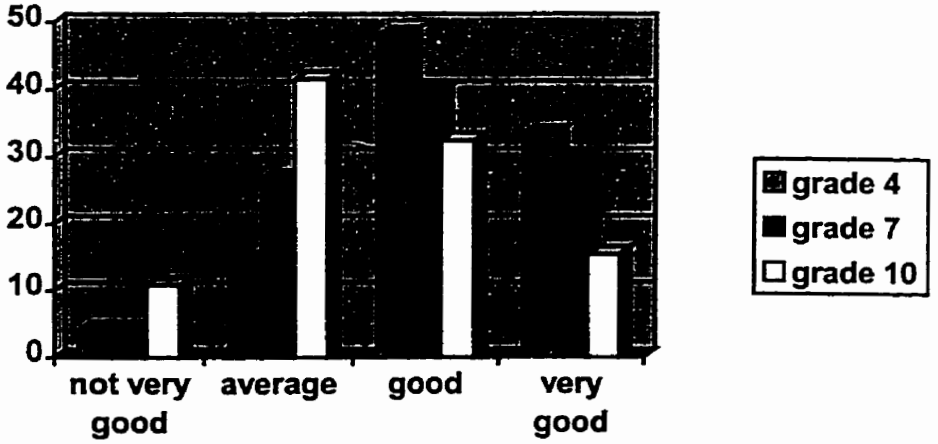
How often do you use a computer away from school?



Do you use a computer away from school to write or word process?



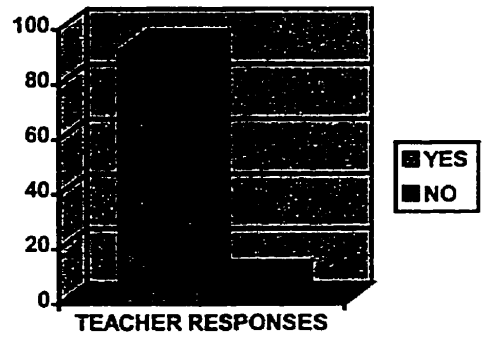
How good are you at using the computer?



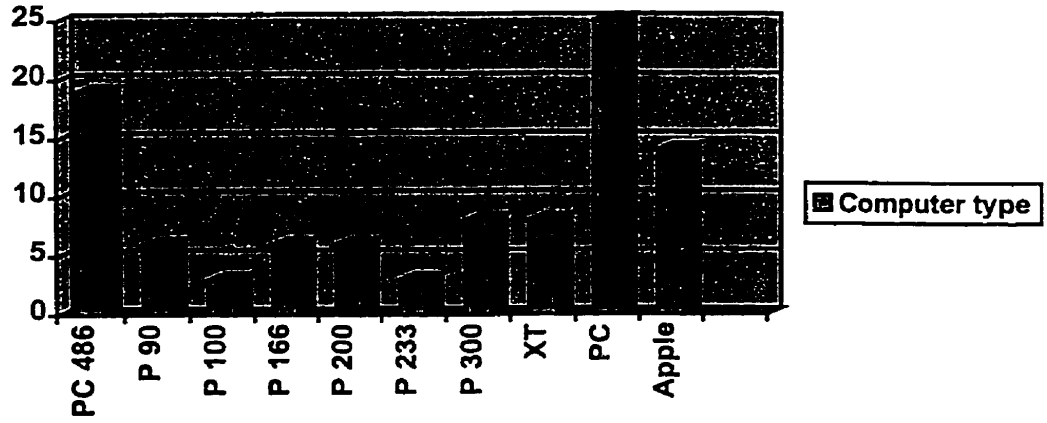
Phase Three: Teacher Needs

Teacher Questionnaire: The teachers of PCS and Lighthouse Christian Academy were given the survey to complete. The total surveys handed out was 50, the total returned was 36. The results for each question were tabulated and the findings were bar graphed as percentages.

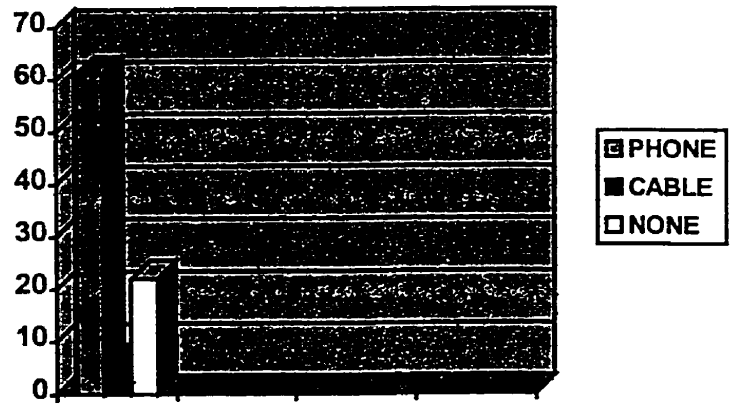
Question 1.) Do you have access to a computer at home?



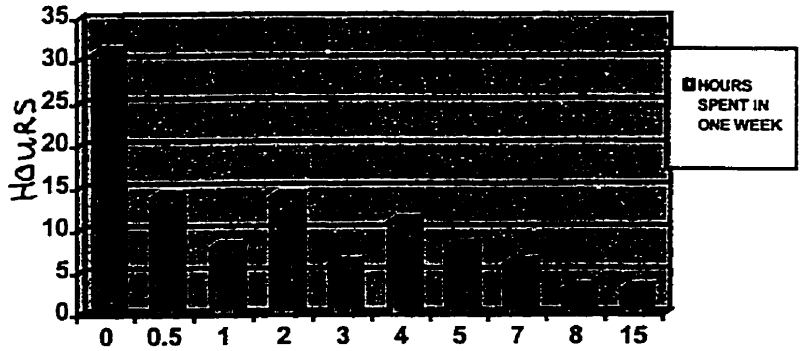
i.) Describe your computer: horizontal scale describes the types of computer generations owned by teachers. P=pentium class, PC=windows operating systems not defined by survey, Apple=mac operating systems.



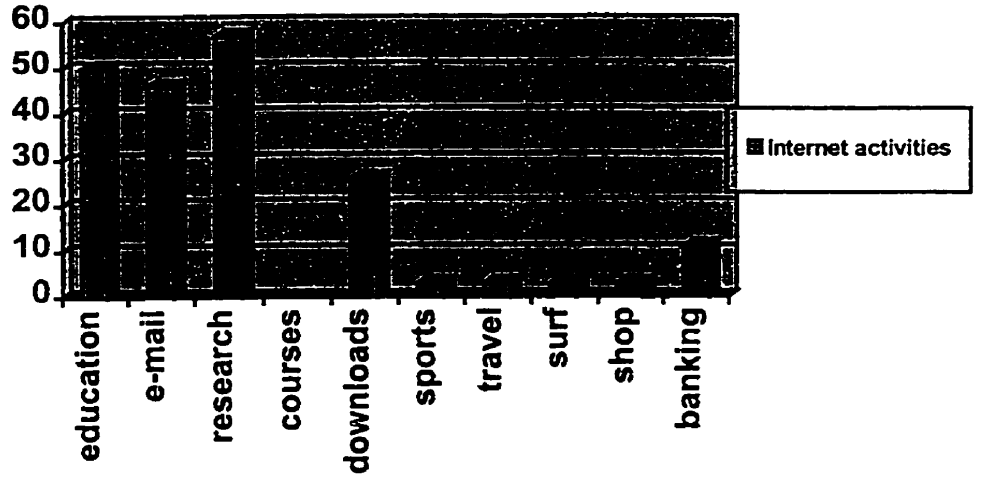
ii.) What is the modem type (phone/cable)?



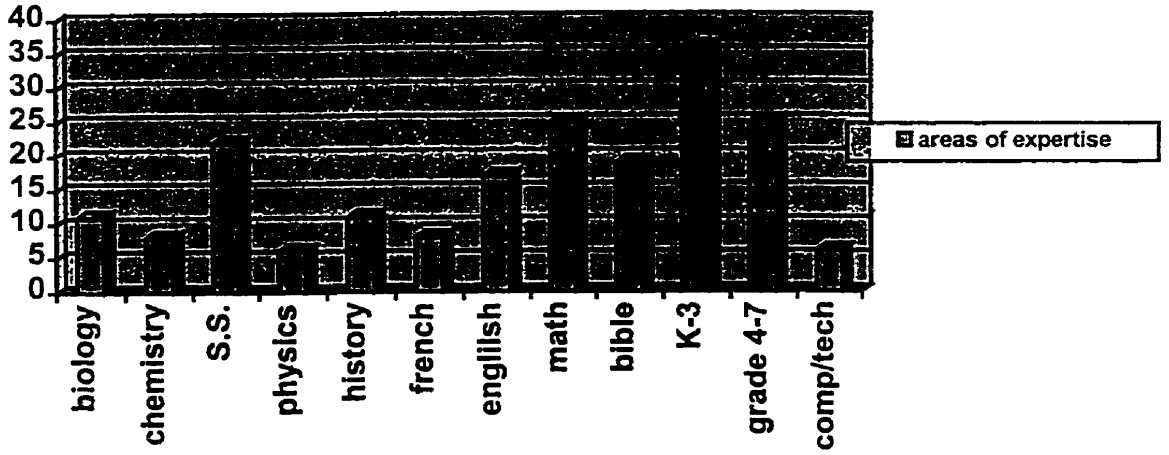
iii.) How many **hours** do you spend on the Internet in one week?



iii.) What do you do on the net?

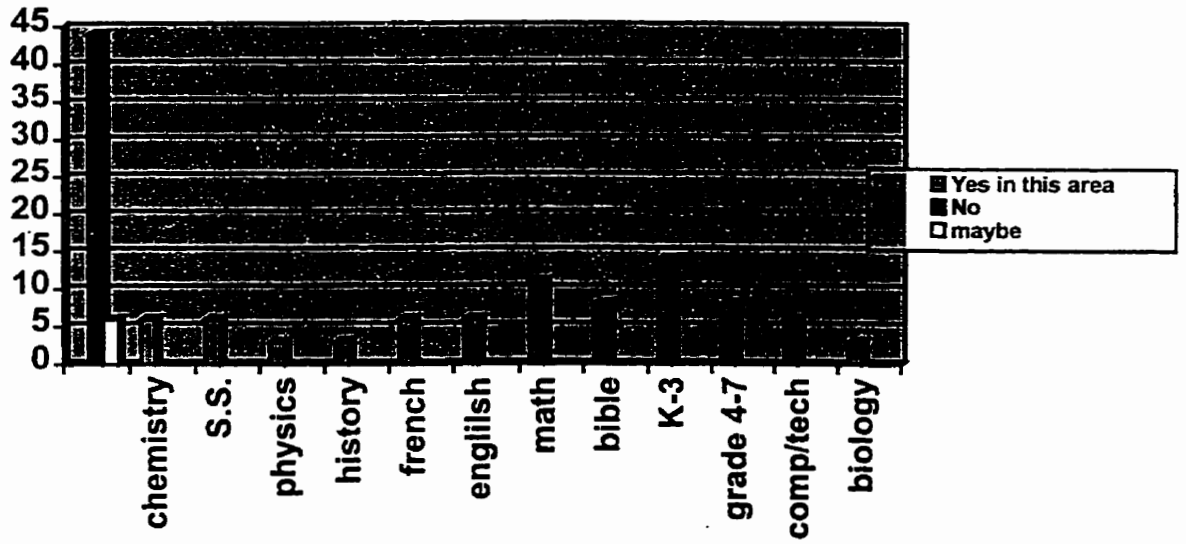


Question 2.) i.] Please indicate your areas of teaching expertise: (teacher responses are expressed as percentages)



Other areas indicated include: counseling, special needs education, administration, learning assistance, physical education, music, band, art, industrial education, business education.

ii.) Would you be interested in teaching all or part of an on-line course in your area of expertise, if so indicate that preference:



Other areas of expertise in which teachers would consider virtual instruction are: Business Education, Art, Music, and Tourism.

iii.) What time of the day would you consider teaching an on-line course?
Responses varied, here are the results:(only 50% responded)
-morning 14%, afternoon 11%, during school hours 8%, evenings 11%, anytime 6%.

Question 3.) Have you experienced on-line videoconference on the Internet? If so, what topics were discussed or learned?

- 11% of Teachers surveyed had experienced a video conference
- topics discussed: education policy with British Columbia Teachers Federation, curriculum for French program in BC, Ministry of Education Graduation Requirements meeting, Tel Ed 98 conference

Question 4.) Indicate what your concerns/fears might be as a teacher entering this new realm of instruction?

- accountability and support from other staff from similar courses
- burnout as I try to keep up with conventional as well as electronic

demands
- inexperience is my big drawback
- time commitment
- technical problems
- communication with students – missing the one on one contact with students, being in the same location
- the untried nature of the process
- typing speed
- frustration with the technology
- drain on time
- none
- maybe make sure that all the connections are done right before starting the course
- not sufficient time to learn to use the technology
- that it would be an add-on to the current workload, not a substitution
- time efficiency
- seeing if they understand or not – have to see the whites of their eyes!
- perhaps lack of "warm" contact
- I would need a lot of instruction myself
- students are better at it than I am
- time and resources
- not much available, I imagine, in the Bible area
- limited opportunity to provide multiple learning techniques
- what about labs/experiments?
- who tracks the progress of the students?
- testing?
- the loss of the human dimension and tactile components of relationships as they relate to success in learning and growth as a teacher
- heart failure!
- as a teacher, I value the relationship with students and this may be lost
- it is important for students to interact academically and socially with other students/adults. Is it really good for students to learn in isolation from "real" contact with people?
- lack of interpersonal interaction
- I don't know anything about it
- lack of time to learn necessary skills
- it would take a lot of time to become proficient and know what I was doing
- prep time to learn how to do it
- right now I simply would have no time for it
- social is one of the most important skills students develop. All of

life is social. If you haven't developed social skills you do not fit into society
- amount of time required to set-up etc.
- how can the information be best presented so that the learning styles of each student can be dealt with?
- what frames of evaluation would be best suited for this type of instruction
- I'm still trying to learn all the things you can do with word processing. I've never sent an e-mail on my own or located info on the internet
- total paranoia
- I don't know how I could fit in any more hours... perhaps this could replace something else!
- how to do it: training
- curriculum details: how much do you do on computer, what about student interactions?

Question 5.) Listed below are a variety of learning activity styles for students. Please indicate what percentage of time your classes spend on each of the activities below:(results are averaged)

Group work = 30% Tests = 11% Individual reports = 17%
Presentations (individual) = 11% Presentations (collaborative) = 11%

Other areas indicated include: centers/activities = 26%, labs = 18%, working individually = 35%, discussion = 20%

Phase Four: Feasible Implementation

Phase Four addressed the issue of program development. The question of how a small independent school organization can pursue creating a virtual school was asked. Several meetings were arranged with the Open School Learning Agency. After consultation with the programs Chief Operating Officer and Director, Distance Education Course Development and ABE, the following observations were made:

- a desired model of virtual schooling would be a blending of synchronous with asynchronous models with stringent standards for technical, curricular, and pedagogical expectations.
- have a well supported and well monitored program
- consideration has to be made for the transfer of funds back and forth between institutions

- act as a service learning center to acquire other sites to compliment topics or subjects offered, offer the best provider of courses to your students and still support them with libraries, counseling, etc.
- provide a consortium type model for content and delivery
- content development is a key area to consider, the Open School Learning Agency develops on-line courses by writing the whole program themselves, sending it out to students and supporting it with staff.
- large cost is in program content development,
- send teachers from PCS community to summer training institutes to orient teachers to this medium
- identify a niche that PCS can create that no one else is doing and create community around that

Curriculum and instructional design are the major focus in online learning. Instructional design and curriculum learning outcomes form the whole package that delivers course content in a virtual school. This includes teacher resources, student resources, teaching strategies, and teacher support. Software and technology aid in the delivery of the course in the virtual environment. In recent years, there have been great advances in software development that have allowed the synchronous and asynchronous modes of virtual education delivery. To get an idea of how post secondary institutions are currently delivering virtual classes, the Associate Dean of North Island College was consulted and Listed below are some examples of these technologies.

First Class: This is an icon driven software; it provides students with easy access to virtual classrooms, tutorial help, and examination rooms. It is a discrete presentation that does not over-stimulate the student. It permits easy tracking of students' progress.

Webboard: This is a very robust software, and is inexpensive. It allows students to access via the Internet. It has a chat service for students.

Net Meeting and Quick Cam as viable video conferencing: This is a very affordable way to videoconference.

Whiteboard: This software permits students and teachers to interact via handwriting with a mouse. Teachers could watch students spell or do math problems or do cursive writing.

Net Vista: This is an Internet Censure software/hardware package. It allows teachers to let students access the World Wide Web. It automatically blocks any inappropriate sites students might try to

access.

Zebu: This software permits collaborative student project work. Students from any computer, anywhere in the world can log onto a common server and contribute to a project using Zebu software. Zebu offers hypertext, sound, graphics, text and discussion boxes to create a contemporary method of presentation of student projects in the 21st century. This software also permits teachers to monitor student progress in an unobtrusive way.

Learning Space: This software package allows the school to create separate rooms for students to enter. These rooms consist of the following: a media center where students can access resources to their course work, a course room where students log on to learning modules, a profile room where students can access their progress reports, and a student chat room for student interaction.

LearnLinc; offers familiar real-time collaboration features such as videoconferencing, whiteboarding, and application sharing. Chrysler Corporation has been using LearnLinc to teach employees to use the company's custom finance software. They have found that an 80-20 model that uses a live person 20 % of the time in learning situations and uses asynchronous methods of learning the other 80% of learning situations. (Hibbard, 1998)

RESEARCH IMPLICATIONS / FINDINGS

A Discussion of Needs Assessment Results

Phase One: Homeschool Parents Needs

Homeschool parents are open to participating in a virtual school initiative. The study shows that homeschool parents are especially interested in specific courses, not in all-year programs. Homeschool parents indicate interest in courses at the 8-12 grade levels. Parents were extremely interested in courses in Math, Science (Biology, Chemistry, and Physics) and in a 2nd Language. Other course areas of virtual instruction include: Art, Physical Education, Bible, and learning tutorials.

Homeschool parents are excited about this vehicle of education delivery

because it provides the parents with a third person's perspective in their child's learning. This third perspective would also give the testing and assessment forming another view of the child's progress.

Homeschool parents suggested a number of themes that would allow Christian Perspective to be kept in a virtual school delivery model.
Theme 1: Keep Christian Perspective through teachers:
- committed Christian teachers with experience
- teachers who understand homeschoolers
- role models are Christian

Theme 2: Keep Christian Perspective through curriculum:
- *acknowledging the presence of the creator, throughout all of the curriculum
- Christian critique of novels, literature, media, material, virtual teacher provide launchpad for home discussion
- no objectionable material

Theme 3: Keep Christian Perspective through student support:
- career options, counseling for CAP from Christian perspective

Theme 4: Keep Christian Perspective through intentional Interaction:
- chat rooms need a mature Christian monitor
- more interaction, i.e. debates/chats between families and students in our province and in other provinces

Phase Two: Students Needs

Part A:

Over 80% of the senior students surveyed have access to computers at home. Of these, 60% are capable of being hooked up to the Internet. This indicates that there would not be high costs associated with getting students enrolled into a virtual school. It also indicates that the students have the ability to connect to a virtual school.

The survey indicates students are familiar with the Internet and its many facets. Senior students indicate they spend approximately four hours a week on the Internet. By the indication of the various activities done on the Internet, students show familiarity into the multifaceted nature of the World Wide Web. This usage would imply a smooth transition into a virtual school environment.

Senior students indicated preferences for the types of courses they would

consider taking in a virtual environment. Students showed interest in Science, Social Studies, and History. Their top three preferences were in Math, English and French. These findings are congruent with the parents' preferences outlined in phase one.

Students showed a desire to participate on online chats. The topics students chatted on include: game tactics, life philosophy, knowledge of other countries, love, friends, weather, music, sports. These topics are exactly the same topics students discuss in traditional school environments and homes. There seems to be an indication that Information Age Children are able to address social issues and develop cognitive ability using the Internet.

Part B: Comparison to Provincial Norms

The 1998 BC Ministry of Education Assessment in Reading and Writing Survey was used to add additional research into the computer use of students at Pacific Christian School. By comparing students at Grades 4,7, and 10, various conclusions can be drawn.

Students in Grades 4 and 7 experience computer use at school well above provincial averages. However, in Grade 10, there is a large drop to 7.7% from the provincial average of 27.4% use of computers in school. Implications are that students in the high school are not able to access computers. This implication is backed by the responses to the question "do not use a computer at school". The grade 4, and 7's are well below the provincial average in responses and the 10's are well above (27.7%) the provincial of 18%. Students from all three grades have access to computers away from school and use them at a rate above provincial averages. Implications are that our student body lives in homes that stress the importance of computers and computing skills. The questions on computing skills self assessment indicate Grades 4, and 7 students feel very competent but Grade 10 students feel a lack of self assurance in being competent.

Phase Three: Teacher Needs

Over 80% of our teachers have access to computers at home with over 60% of them connectable to the Internet. Implications are that it would not involve high costs to connect teachers to a virtual classroom.

Questions on Internet activities indicate teacher familiarity with the Internet

and the multifaceted nature of the World Wide Web. Implications are that teachers could assimilate relatively smoothly into a virtual environment for teaching by blending these technology skills with their teaching skills if there was a willingness.

There is a large apprehension to teaching on-line. The teachers indicated that 44% of them would not be in favour of teaching on-line. These teachers indicate a variety of reasons for their apprehensions. These reasons can be classified into the following areas:

i.) Time commitment = 30%
ii.) Technology inexperience = 25%
iii.) Pedagogical setup concerns = 25%
iv.) Lack of real life interaction = 18%

Strain on teacher time load is the major concern as indicated in the study. Most of this apprehension comes from the fear of the unknown. Teachers would not be expected to teach in a virtual classroom on top of their regular teaching load. Rather, virtual instruction would be in place of regular teaching time. An example of a teacher timetable could look like this; 8:30 AM-1: 30 PM regular classes in school, 8:30-10:30 PM virtual class instruction from their computer at home.

The research shows that a significant number of teachers would be interested in participating in a virtual teaching environment. A correlation from this is that the teachers that are willing to participate in virtual instruction are in the areas of preference outlined in Phase One and Two by the parents and students.

Technology inexperience is another area of concern for teachers, most teachers lack self confidence in computing skills, inservice and professional development would aid to overcome this weakness.

Pedagogical concerns ranked in the top three teacher concerns. Methods of overcoming these concerns are outlined in the phase four implications listed below.

The area of social interaction and not being able "to see the whites of their eyes" is the last area of teacher concern. As teachers become more familiar with the various software products available today, these types of concerns become less relevant. However, having said that, this is an area of weakness in the delivery of virtual schooling and will be hard to overcome.

Phase Four: Feasible Implementation

The largest obstacle to implementing a virtual school is the availability of course content. As the research has shown, teachers are not prepared to put more time and energy into course content development for the new medium of pedagogy, the virtual school. The Ministry of Education for British Columbia has an agency that is currently developing course content for delivery on the Internet. The Open School Learning Agency is currently developing courses for students to achieve graduation accreditation through their on-line learning programs. The Independent School Branch of the Ministry of Education is currently working with the Open School Learning Agency to initiate an agreement whereby we could use their course curricular content. By entering into a licensing agreement with the Open School Learning Agency, we would be able to send our teachers to be trained in course content and delivery, thereby reducing our teachers' fears in course accountability, content and evaluation. Our teachers could then concentrate on the application of Christian perspective to the course and not worry about content issues. This approach would deliver the Christian perspective that our community requires to be in all our educational programs.

Summary of Research Findings

The research focused on three user groups to assess need for PCS to create a virtual school. The research looked into the following:

1.) What did the students say
2.) What did the parents say
3.) What did the teachers say

The research indicates a high level of agreement among the three user groups and the following three issues:

i.) Does the user have access to technology that will allow connection to a virtual school?
ii.) Does the user show a willingness to use the technology?
iii.) How does the Christian Perspective come through in the use of the technology?

Students showed that 82% of them had access to computers at home. Of these, 60% had modem capability indicating a viable number of students could access and participate in a virtual school. The student research indicates willingness for students to take virtual courses in Math, English, French, and Physics.

Parents expressed the same desire to have their children enroll in selected courses in French, Math, and Sciences. This is a definite match with the students' interests. Parents also expressed a strong desire to maintain Christian Perspective in this virtual delivery model of education. Parents suggested that Christian Perspective could be maintained in three ways:

1.) Through the role models of the teachers in charge of the courses.
2.) Through the curriculum that was offered.
3.) Through the support given to enrolled students like Career and Personal Planning, availability to a Christian Counselor.

Ninety percent of PCS teachers had access to computers at home. Of those having access, 62% had modem capability indicating a viable number of teachers could access and participate in a virtual school. However, 45% of teachers responded "no" to being interested in teaching online courses. When the 55% of the "yes" responses where analyzed for teaching areas, their was a match with the subjects of interest to students and parents. The results indicate an ability to at least pilot a course in the area of strongest interest of the three user groups.

RECOMMENDATIONS

Discussion of Results and Conclusions

The research indicates that PCS could overcome their "limits to growth" as outlined in figure 1 (p2). PCS could increase their student population without burdening the organization with space creation. Rather, a virtual school could produce a student population increase without heavy capital fund expenditures.

The research indicates that a virtual school could allow PCS to expand curricular course offerings. As Berman and Tinker pointed out in the literature review (p6) through Internet courses, small groups of students at a number of small schools and homeschoolers could fill these courses with enrollment. A virtual school would provide technology rich instruction, provide vast resources to the learner and enhance the teachers skills in technology and instruction. Vicki Hancock also reinforces the above statements with her characteristics of an Information Age school outlined in the literature review (p10). Summarizing her: the Information Age school or virtual school will provide student interactivity, student self-initiated learning, and changing roles for teachers.

PCS needs to answer "yes" to several questions outlined by Tammy Dewar in the literature review (p12) before creating a virtual school.

1.) Can PCS better meet the needs of our learners and educators?
2.) Can PCS participate in an overall transformation of working, living and learning?
3.) Can PCS facilitate a global exchange of ideas and information?

Findings have indicated that PCS can say there is a willingness to pursue the above questions.

PCS has the infrastructure to support a virtual school. The 1998 BC School Assessment Survey Questions have shown that students are capable and willing to participate in a virtual school project. The assessment has shown that PCS students are above or at the same level of ability in using technology at the school, and at home, as all other students in the province.

Impediments to PCS creating a virtual school are:

1.) Costs of course content development.
2.) Teacher apprehension to work in a virtual environment.

PCS needs to assess what type of virtual school course content to use. The options are building course content, buying complete course content or buy and customizing course content to fit PCS's community needs. The Open School Learning Agency is developing online courses that meet British Columbia's graduation program requirements. The Independent School Branch of the Ministry of Education is currently working with the Open School Learning Agency to initiate an agreement whereby we could use their course curricular content. By entering into a licensing agreement with the Open School Learning Agency, we would be able to send our teachers to be trained in course content and delivery, thereby reducing our teachers' fears concerning course accountability, content and evaluation. Our teachers could then concentrate on the application of Christian perspective to the course and not worry about content issues. This approach would deliver the Christian perspective that our community requires to be in all our educational programs.

The research has shown a need and desire of students and parents of the PCS community to create a viable virtual school. Creation of a virtual school will establish an affordable link to homebound and homeschooled students, create a avenue for other small independent schools to have their students enroll in courses they cannot offer, and allow PCS students to lighten their traditional school course load by taking a course virtually.

The research has shown that the three user groups of students, parents and teachers are willing to say "yes" to participate in a virtual school. Teachers are apprehensive, however, there is enough teacher interest to pilot a course in Math, English, French or Physics and use that initial course to determine

success of failure of a virtual school.

Based on the results outlined in this paper, it is recommended that PCS pursue the creation of a virtual school. The model of such a school should be a combination of synchronous/asynchronous delivery (p12). It should allow PCS students to do virtual course work during the daily routine of traditional class timetables. The virtual school should start with piloting a senior level course in the area of highest interest to students, parents, and teachers. PCS can not afford to create the content of the course using its current funding. PCS should look to work with the Open School Learning Agency to purchase licensing of their course content. PCS needs to then customize this course content to meet the needs of its community. These needs include providing a Christian Teacher as a role model to students, and to add Christian content into the purchased course content.

It is recommended that PCS look to enter into a licensing agreement with the Open School Learning Agency during the 1999/2000 school year. It is recommended that PCS look to have a pilot course available for September 2000/2001. PCS could facilitate other small independent Christian schools by piloting courses in Math 12, Math 11, Physics 12, or Physics 11. Training of a suitable teacher should occur during the summer of 2000. Advertise and create a web page to the Christian Homeschool community, PCS school community and all Society of Christian Schools in British Columbia starting in the spring of 2000.

It is recommended that the PCS computer department complete necessary infrastructure designs to accommodate a virtual school on its server. This should occur during the year 2000. The computer department should also examine the technological vehicles to deliver a virtual school and purchase the most appropriate software during the year 2000.

During the pilot course it is essential that personnel involved in the pilot document "what is" and "what is not working", to allow future success of additional courses to the Pacific Christian Virtual School.

Future Steps:

Upon Board approval, it is recommended that PCS undertake a cost analysis study to determine the student enrollment that would make a pilot course viable to initiate. Upon Board approval, it is recommended that PCS develop a detailed implementation plan that will outline the steps needed to be taken to get a virtual course up and running.

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APPENDIX A

Ten Questions Your Organization Should Answer *Before* Jumping Into Online Education/Training

A-1

BULLA GYMNASIA VIRTUALES

Online All the Time
A free Bi-Monthly E-mail Newsletter
ABOUT ONLINE EDUCATION AND TRAINING

EDITORS
Dr. Tammy D. Dewar and Dr. Robert N. Higgins

Back issues archived at http://www.cybercorp.net/gymv/bulla
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IN THIS EDITION

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Feature Articles

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* Teaching Online and Facilitating Cooperative Learning by Dr. Rob Higgins
* Ten Questions Your Organization Should Answer *Before* Jumping Into Online Education/Training by Dr. Tammy Dewar

* Coming Up in Future Issues
* GymV Update
* Surfing ..... some worthwhile sites
* BULLA GYMNASIA VIRTUALES Information

(OTHER ARTICLES DELETED)

Ten Questions Your Organization Should Answer *Before* Jumping Into Online Education/Training

by Dr. Tammy Dewar

There's been an overnight explosion in the number of business and educational organizations putting their courses online within the last year. The perceived pressure to get courses up quickly can often lead to poorly planned and executed conversions. Has your organization addressed (or better, *grappled with*) these questions in the rush to the gate?

1. Why are we doing this?

There are several commonly heard reasons:

- o everyone else is doing it, so we have to
- o we will save money
- o we need to compete globally for registrations (for educational institutions)
- o we're able to deliver training more efficiently

Less frequently does one hear these kinds of reasons:

- o we can better meet the needs of learners and educators
- o we can participate in an overall transformation of working, living, learning
- o we can facilitate a global exchange of ideas and information
- o we can break down traditional hierarchical structures and fosters knowledge building
- o we can encourage the integration of one's "learning" into all aspects of one's life
- o we can facilitate a broader access to knowledge and publishing

While an organization *eventually* may save money in physical hardware (such as classrooms, lighting), or in travel expenses in business, many financial and human resources are needed to properly launch an online initiative.

2. What do we know about online education?

If you've been advised about online education by someone who's trying to sell you a proprietary conferencing system (and we know this happens!), you could be in for a journey full of headaches. The technologies of the Internet change frequently, and being forever tied to a costly system that doesn't integrate with the Internet/WWW has severe limitations.

Understanding the technology is really only one aspect though. Online education is a *culture shock* for anyone who's ever experienced it. Well meaning, but sometimes naive, administrators, managers, course developers and facilitators who think they can *read about it* and then know how to implement it, subject their learners to all sorts of unnecessary stresses and obstacles.

If you as an educator (and the decision makers in your organization) haven't experienced online education yourself and/or participated in professional development opportunities led by online educators (and preferably that professional development is *also* delivered online!), you only know a small part about online education. Your technical people are indispensable when it comes to your technology infrastructure, but they probably don't possess the necessary expertise to educate your organization about the issues of online education.

3. What is our technical infrastructure?

If your organization, like most, has a separate computing or networking department from your training or educational department, make sure you spend time clarifying expectations and responsibilities. If your learners (or facilitators) are experiencing technical problems, is the computing department available or do learners/facilitators wait for service (or worse, leave messages on answering machines never to have them returned)?

Do you have a technical person devoted to online education? If you don't, you should consider it. One of the toughest things for learners, as pointed out by Kathy in this issue, is dealing with technology problems. If learners don't get friendly and efficient help, they'll quickly become frustrated and overwhelmed. This translates into low employee productivity in business and dropouts in education.

4. What do our learners know about online education?

   A big mistake made in course conversions of any kind (whether it's to online education or other forms of distance education) is assuming the learners will embrace it wholeheartedly (because you have!) and quickly adapt their learning/communication styles to the new medium.

   Wrong! Learners need to be prepared to learn in this new way AND they need to do it in a non-threatening manner. Putting learners into a core course for their master's program (or a required training program for their job) and expecting them to master content under threat of grades or loss of pay increase while adapting to an online medium, is setting them up for failure.

5. What will we do to prepare them for the change?

   Learners need to develop a new repertoire of learning and communication strategies. This does not happen in a 2 hour orientation to the conferencing system, helpful and necessary as that is. Think carefully about how you can create meaningful learning opportunities for them. How long did it take you to learn the features of your email program for example? (or do you know them now??!)

   I advocate orientation sessions for distance learners that will earn them credit toward whatever certificate or degree they are taking.

6. What access to technology do they have?

   Fully interactive, graphically intense web pages with multiple java scripts is not likely to be appreciated by the learner who just added a modem to his/her 386 PC and will only access a text based browser.

   This seems obvious, but it's amazing how many times organizations get carried away by the latest technology only to realize that a high percentage of their learners don't have access to the latest and best in equipment.

7. How will we prepare instructors for the change?

   Learners are not the only ones thrown unprepared into online learning situations. A good number of instructors also end up at that two hour seminar on how to post notes on the conferencing system. This is important, certainly, but not complete.

   Delivering online education *effectively* requires a new conception of one's role. As I've said elsewhere, reproducing a lecture on a web page is a limited view of education and does not begin to capitalize on the potential of the internet. (Not to get sidetracked, but reproducing our traditional passive forms of education using technology seems a gross misuse of not only the powerful emerging technologies, but also everything we've come to realize about learning overall.)

   Instructors also need to *experience* online education, in all its frustration and glory and be given time, resources, learning opportunities, and support to prepare themselves for their new roles as educators. As indicated by Kathy in her piece, online education does call for a facilitator of learning. For many, this is a significant departure from what they're used to.

As with learners, instructors need time and professional development opportunities to learn about and adjust their own teaching strategies to meet the demands of being an online educator.

8. Is our bureaucracy set up to handle online education?

   Part of this was addressed by the technical infrastructure above. The main question is

   > Is your organizing willing to modify policies, procedures and regulations?

   Hanging onto archaic structures and rules that control and regulate learners contradicts the empowering aspects of online education. Questions to ponder:

   - o Do you require f2f contact time in online courses?
   - o Do your learners have to go out of their way to purchase regular print based materials?
   - o Can registration be handled via email?
   - o Do you regulate what tools your learners can use to ensure that they *don't waste time" surfing the net?
   - o Have you set out elaborate procedures to make sure your learners don't "cheat"? (And cheating in a business setting could mean taking time at work to participate in an online course.)

9. Have we implemented support, reward and compensation systems for the early adopters who lead the organization in online education initiatives?

   This is related to some of the points discussed above. Delivering an online course is *not* easier than face to face. It takes a tremendous amount of time and persistance to learn the skills to adapt course materials, instructional strategies, and one's own usual working schedule to effectively deliver an online course.

   Do people in your organization appreciate this? Do your compensation systems recognize online education as legitimate? Is there any incentive for people to deliver a course online? Is there proper support to do so?

10. Are we willing to deal with the inevitable mistakes that go along with this type of innovation?

    This last question acknowledges that even if you spend a great deal of time and energy planning, there are still unknown challenges that will arise. This is inevitable with any sort of educational innovation (because people can be unpredictable), but even more so with online education.

    If you are serious about incorporating online education into your overall organization structure, you have to realize it is a long term commitment that has the potential to transform the very essence of how you've delivered educational experiences in the past. Such transformational change does not come without a certain amount of challenge. Organizations need a formative evaluation approach that allows for the constant reflection upon and reframing of those challenges.

BULLA GYMNASIA VIRTUALES Information

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APPENDIX B

PowerPoint Presentation Slides

Royal Roads University

Master of Arts in Leadership and Training

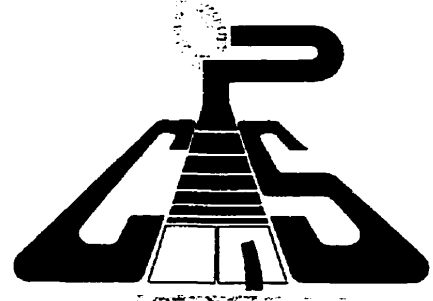
A Project to Conduct a Needs Assessment for the Implementation of a Virtual School

for

Pacific Christian School

by

Berkley Glazer



The Impact of Technology will occur in the following areas:

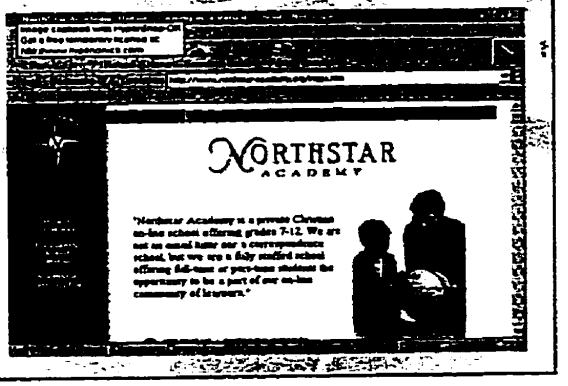
- GLOBAL DELIVERY MODEL OF CHRISTIAN EDUCATION
- AFFORDABLE LINK TO HOMEBOUND AND HOME SCHOOLED STUDENTS
- SUPPORT FELLOW CHRISTIAN SCHOOLS IN OFFERING HIGH SCHOOL COURSES VIA THE WEB

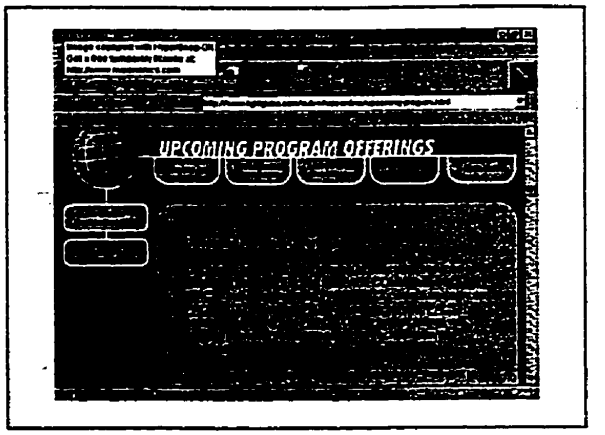
The National Home Education Research Institute in Salem, Ore., estimates that about 1% of the US's 50 million school-aged children are learning at home. The number has grown 15% a year since 1990.

The "informational age" has already been ushered in as we near the 21st century. This requires a paradigm shift for education from the industrialized age model of formal education delivery. The old organization is only open for ten months of the year and has mandatory attendance from 8:30 - 3:00 daily. The new informational age model will require a more fluid organization. One that can be accessed 24 hours a day, 365 days a year, and be attended when the learner is able. This paradigm shift will be significant for learners, parents, teachers, and administrators as we progress further into the informational age we are currently in.

Industrial Age	Informational Age
Labour intensive; 95% of a typical school's budget goes to staff. Only 5% of a typical budget goes to capital such as books, software, computers.	Capital intensive; majority of budget goes to educational resources, including individualized instruction are delivered via the web.
Transportation intensive; the learner must physically travel to the key educational resource resulting in high costs, geographic barriers, no learner selection of institutes to attend	Communication intensive; learner can access educational resources anywhere in the world at anytime

VIRTUAL HIGH SCHOOLS THAT ALREADY EXIST





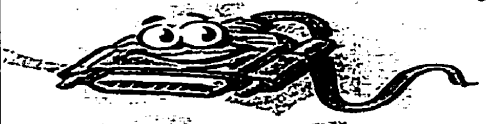
Christian Home Schoolers are in favour of a Christian Virtual Schooling delivery model.

Recent research indicates support for courses in:

- 2nd Language
- Math 8-12
- Science 7-12 (physics, chemistry, biology)
- Bible Courses 4-12
- Learning Tutorials
- English 11-12

TECHNOLOGY UPDATE FOR PCS

PCS has a fiber connection between the 2 buildings



PCS has two networks that are up and running

PCS will have internet access via SHAW cable by the end of November.

WHAT IS A VIRTUAL SCHOOL?

ASYNCHRONOUS

-this type of distance learning is static, not real time in delivery

-delayed reaction time between teacher and student

- need access to the Internet to deliver this model

SYNCHRONOUS

this type of delivery is dynamic, real time, student and teacher see, hear and write/type in synch with each other

- need access to the Internet and a video camera attached to PC to delivery this model

IS THIS A REAL AND VIABLE OPPORTUNITY FOR PCS?

Stay tuned for the finished report coming to you April 16, 1999!

APPENDIX C

Student Questionnaire

STUDENT QUESTIONNAIRE

Grade:_____

Dear Senior Student:
I would appreciate a few minutes of your time to complete the following questionnaire. I am currently doing a research project for Pacific Christian School on the feasibility of implementing a virtual school here. I need to collect data from all possible user groups of a virtual school and senior students are a category. Please be assured that you will remain anonymous and your name will not appear in the research findings. I do need you to sign below to allow me to use your answers in the survey. Thanks for your assistance. *Mr. Glazer* Consent signature:_____

1.) Do you have personal access to a computer at home?
If "yes" continue on, if "no", go to question #2

i.) Describe your computer and state its speed.

ii.) Does your computer hook up to the Internet?
What is the modem type(phone/cable)?
What speed is the modem?

iii.) How many hours do you spend on the Internet?
In one day?_____
In one week? _____

iv.) What do you do on the net? Please check as many as apply to you.

games;_____ chat;_____ visit sites;_____ take courses;_____
download software;_____ e-mail;_____ homework research;_____
other (explain);_____

2.) At school, how often do you use the Internet for research in one week?

3.) At school, how often do you use the Internet for personal research?

4.) Would you consider taking courses on the Web?
If so, please indicate which courses you would consider taking on-line;

Physics_____	English_____	French_____
Biology_____	Math_____	Chemistry_____
History_____	Social Studies____	Other (specify name) _____

5.) Have you experienced on-line chat on the Internet?
If so, what general topics do you discuss?

6.) Have you experienced on-line videoconference on the Internet?
If so, what topics were discussed or learned?

7.) What time of the day would you access an on-line course?

8.) Please rank the following learning styles as 1 = favourite kind of learning activity to 5 = least favourite learning activity.

Group work_____	Tests_____	Individual reports_____
Presentations (individual)_____		Presentations (collaborative)_____

Other (please explain)_____

APPENDIX D

1998 BC School Assessment Survey for Pacific Christian School

Pacific Christian School

School 6196084

Grade 4 Results

Provincial Assessment of Reading & Writing 1998

Province of British Columbia
Ministry of Education

1998 BC Assessment of Reading and Writing
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 4

Participation Rates

	Province	District	School
Students Participated	91.0% (45706)	94.4% (4436)	100.0% (48)
Total Students Enrolled	**100.0% (50212)**	**100.0% (4698)**	**100.0% (48)**

1. Are you a girl or a boy?

	Province	District	School
A. Girl	49.9% (23171)	50.7% (2266)	54.2% (26)
B. Boy	50.1% (23263)	49.3% (2204)	45.8% (22)
Total	**100.0% (46434)**	**100.0% (4470)**	**100.0% (48)**

2. What is the language spoken most often at home?

	Province	District	School
A. English	83.4% (38472)	84.5% (3765)	100.0% (48)
B. French	1.0% (471)	0.6% (25)	0.0% (0)
C. Other language	15.6% (7213)	14.9% (664)	0.0% (0)
Total	**100.0% (46156)**	**100.0% (4454)**	**100.0% (48)**

3. Do you go to learning assistance for help?

	Province	District	School
A. Presently going	21.2% (9732)	17.2% (762)	20.8% (10)
B. Gone in the past	20.4% (9403)	17.7% (785)	22.9% (11)
C. Never	58.4% (26859)	65.1% (2882)	56.3% (27)
Total	**100.0% (45994)**	**100.0% (4429)**	**100.0% (48)**

4. Do you attend ESL classes?

	Province	District	School
A. Presently attending	6.1% (2768)	2.7% (119)	0.0% (0)
B. Attended in the past	6.8% (3104)	4.3% (188)	0.0% (0)
C. Never	87.1% (39506)	93.0% (4065)	100.0% (48)
Total	**100.0% (45378)**	**100.0% (4372)**	**100.0% (48)**

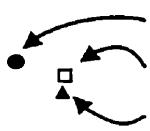
5. How often do you read books for fun?

	Province	District	School
A. Almost every day	64.6% (29604)	63.0% (2787)	61.7% (29)
B. About once a week	22.7% (10427)	23.8% (1054)	19.1% (9)
C. About once a month	5.2% (2374)	6.1% (269)	12.8% (6)
D. Almost never	5.7% (2622)	5.8% (257)	6.4% (3)
E. Never	1.8% (823)	1.3% (59)	0.0% (0)
Total	**100.0% (45850)**	**100.0% (4426)**	**100.0% (47)**

6. Do you like to read Comic books?

	Province	District	School
Yes	55.5% (25917)	54.6% (2462)	47.9% (23)
No	44.5% (20764)	45.4% (2045)	52.1% (25)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

Example:



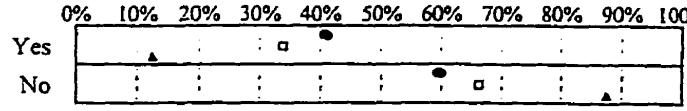
For each item, there are symbols representing percentages of responding students for the Province (dot: •), the District (square: ▫), and the School (triangle: ▲).

In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

Provincial enrollments are public and independent schools. District enrollments are public schools only.

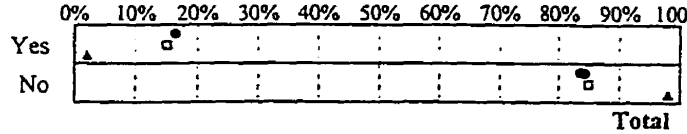
1998 BC Assessment of Reading and Writing
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 4

7. Do you like to read Magazines?



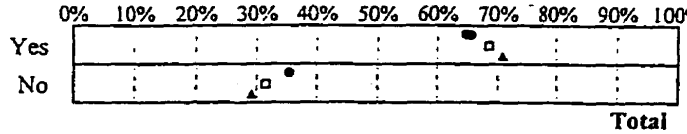
	Province	District	School
Yes	40.6% (18945)	33.8% (1523)	12.5% (6)
No	59.4% (27736)	66.2% (2984)	87.5% (42)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

8. Do you like to read Newspapers?



	Province	District	School
Yes	16.4% (7652)	15.1% (681)	2.1% (1)
No	83.6% (39029)	84.9% (3826)	97.9% (47)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

9. Do you like to read Fiction books?

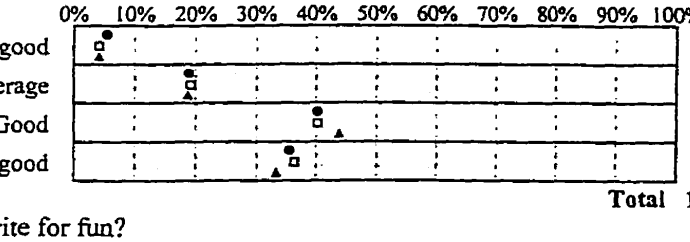


	Province	District	School
Yes	64.7% (30204)	68.5% (3089)	70.8% (34)
No	35.3% (16477)	31.5% (1418)	29.2% (14)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

10. Do you like to read Non-fiction books?

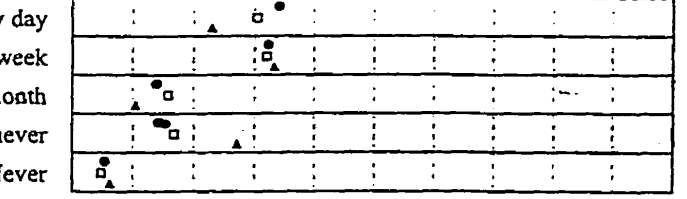
	Province	District	School
Yes	47.1% (22008)	46.8% (2109)	37.5% (18)
No	52.9% (24673)	53.2% (2398)	62.5% (30)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

11. How good are you at reading?



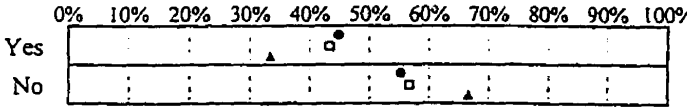
	Province	District	School
A. Not very good	5.5% (2519)	4.2% (188)	4.2% (2)
B. Average	18.9% (8695)	19.2% (852)	18.8% (9)
C. Good	40.2% (18520)	40.3% (1789)	43.8% (21)
D. Very good	35.5% (16371)	36.3% (1612)	33.3% (16)
Total	**100.0% (46105)**	**100.0% (4441)**	**100.0% (48)**

12. How often do you write for fun?



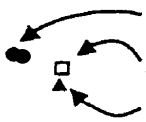
	Province	District	School
A. Almost every day	34.1% (15668)	30.4% (1344)	22.9% (11)
B. About once a week	32.3% (14838)	32.1% (1420)	33.3% (16)
C. About once a month	14.0% (6414)	15.9% (703)	10.4% (5)
D. Almost never	14.3% (6561)	16.8% (745)	27.1% (13)
E. Never	5.4% (2476)	4.8% (214)	6.3% (3)
Total	**100.0% (45957)**	**100.0% (4426)**	**100.0% (48)**

13. Do you like to write Letters?



	Province	District	School
Yes	44.8% (20914)	43.4% (1954)	33.3% (16)
No	55.2% (25767)	56.6% (2553)	66.7% (32)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

Example:



For each item, there are symbols representing percentages of responding students for the Province (dot: •), the District (square: ▫), and the School (triangle: ▲).

In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

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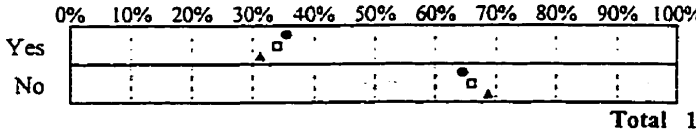
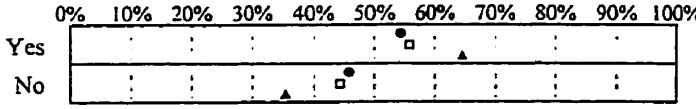
14. Do you like to write Journals?



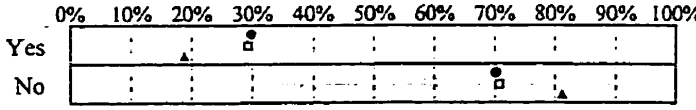
	Province	District	School
Yes	35.5% (16575)	34.0% (1533)	31.3% (15)
No	64.5% (30106)	66.0% (2974)	68.8% (33)
Total	100.0% (46681)	100.0% (4507)	100.0% (48)

15. Do you like to write Stories, Plays, Poetry?



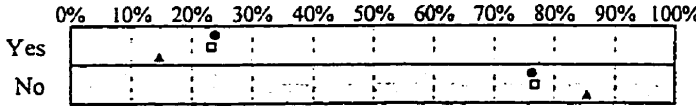
	Province	District	School
Yes	54.2% (25290)	55.7% (2509)	64.6% (31)
No	45.8% (21391)	44.3% (1998)	35.4% (17)
Total	100.0% (46681)	100.0% (4507)	100.0% (48)

16. Do you like to write Notes, Lists?



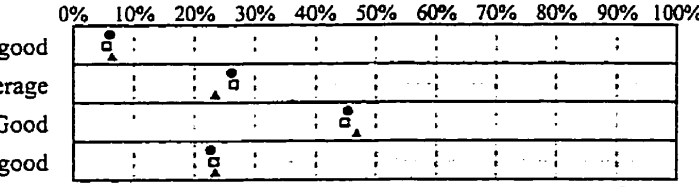
	Province	District	School
Yes	29.8% (13896)	29.2% (1317)	18.8% (9)
No	70.2% (32785)	70.8% (3190)	81.3% (39)
Total	100.0% (46681)	100.0% (4507)	100.0% (48)

17. Do you like to write Reports, Articles?



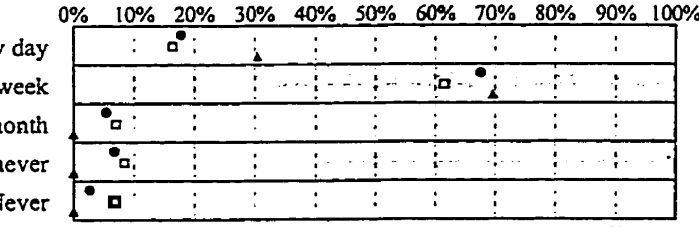
	Province	District	School
Yes	23.8% (11090)	23.2% (1047)	14.6% (7)
No	76.2% (35591)	76.8% (3460)	85.4% (41)
Total	100.0% (46681)	100.0% (4507)	100.0% (48)

18. How good are you at writing?



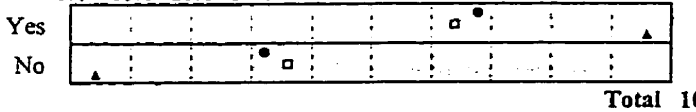
	Province	District	School
A. Not very good	6.0% (2753)	5.5% (243)	6.4% (3)
B. Average	26.1% (11995)	26.5% (1172)	23.4% (11)
C. Good	45.3% (20847)	44.9% (1988)	46.8% (22)
D. Very good	22.6% (10395)	23.2% (1028)	23.4% (11)
Total	100.0% (45990)	100.0% (4431)	100.0% (47)

19. How often do you use a computer at school?



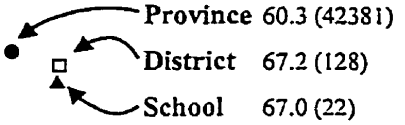
	Province	District	School
A. Almost every day	17.7% (8117)	16.3% (723)	30.4% (14)
B. About once a week	67.6% (31023)	61.5% (2719)	69.6% (32)
C. About once a month	5.4% (2476)	7.0% (309)	0.0% (0)
D. Almost never	6.7% (3065)	8.4% (370)	0.0% (0)
E. Never	2.6% (1204)	6.8% (302)	0.0% (0)
Total	100.0% (45885)	100.0% (4423)	100.0% (46)

20. Do you use the computer at school to write or word process?



	Province	District	School
Yes	67.8% (31652)	63.9% (2881)	95.8% (46)
No	32.2% (15029)	36.1% (1626)	4.2% (2)
Total	100.0% (46681)	100.0% (4507)	100.0% (48)

Example:



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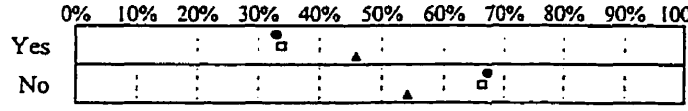
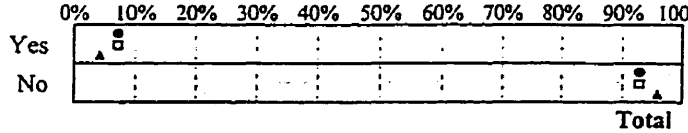
21. Do you use the computer at school to search for information?



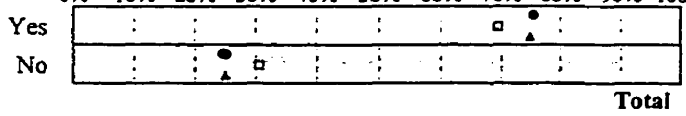
	Province	District	School
Yes	32.9% (15358)	33.7% (1520)	45.8% (22)
No	67.1% (31323)	66.3% (2987)	54.2% (26)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

22. Do you use the computer at school to send messages to other people (electronic mail)?



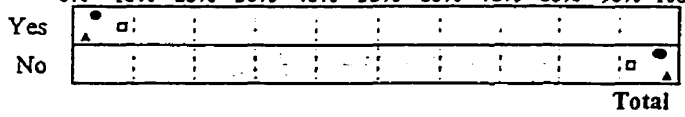
	Province	District	School
Yes	7.2% (3358)	7.2% (324)	4.2% (2)
No	92.8% (43323)	92.8% (4183)	95.8% (46)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

23. Do you use the computer at school to play games?



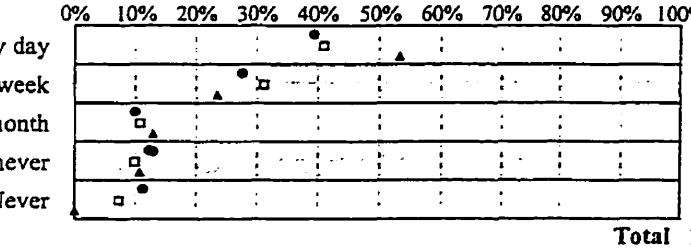
	Province	District	School
Yes	75.5% (35242)	69.5% (3131)	75.0% (36)
No	24.5% (11439)	30.5% (1376)	25.0% (12)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

24. Do not use computer at school.



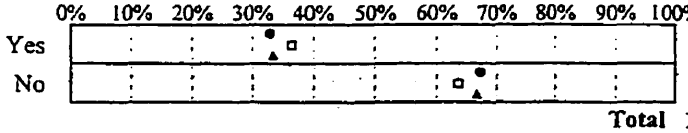
	Province	District	School
Yes	3.6% (1703)	8.1% (365)	2.1% (1)
No	96.4% (44978)	91.9% (4142)	97.9% (47)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

25. How often do you use a computer away from school?



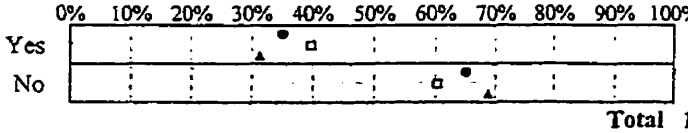
	Province	District	School
A. Almost every day	39.3% (17883)	41.0% (1803)	53.2% (25)
B. About once a week	27.6% (12538)	31.2% (1371)	23.4% (11)
C. About once a month	9.8% (4479)	10.7% (469)	12.8% (6)
D. Almost never	12.1% (5518)	9.8% (433)	10.6% (5)
E. Never	11.2% (5078)	7.3% (321)	0.0% (0)
Total	**100.0% (45496)**	**100.0% (4397)**	**100.0% (47)**

26. Do you use the computer away from school to Write or word process?



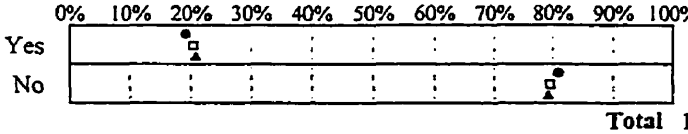
	Province	District	School
Yes	32.8% (15325)	36.5% (1643)	33.3% (16)
No	67.2% (31356)	63.5% (2864)	66.7% (32)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

27. Do you use the computer away from school to Search for information?



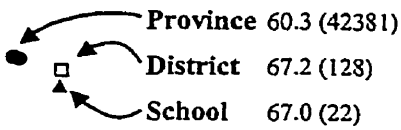
	Province	District	School
Yes	35.0% (16339)	39.7% (1789)	31.3% (15)
No	65.0% (30342)	60.3% (2718)	68.8% (33)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

28. Do you use the computer away from school to send messages to other people (electronic mail)?



	Province	District	School
Yes	19.0% (8892)	20.4% (920)	20.8% (10)
No	81.0% (37789)	79.6% (3587)	79.2% (38)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

Example:



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In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

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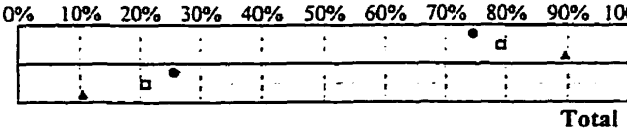
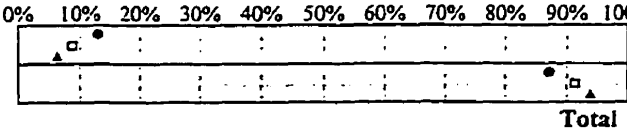
29. Do you use the computer away from school to play games?



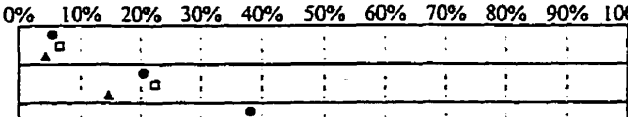
	Province	District	School
Yes	74.5% (34764)	79.1% (3567)	89.6% (43)
No	25.5% (11917)	20.9% (940)	10.4% (5)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

30. Do not use computer away from school.



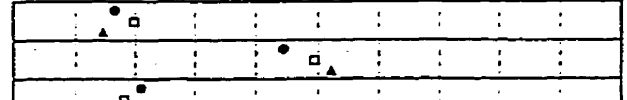
	Province	District	School
Yes	12.8% (5991)	8.7% (390)	6.3% (3)
No	87.2% (40690)	91.3% (4117)	93.8% (45)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

31. How good are you at using the computer?



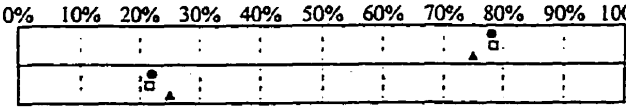
	Province	District	School
A. Not very good	5.3% (2411)	6.5% (288)	4.2% (2)
B. Average	20.4% (9320)	22.4% (985)	14.6% (7)
C. Good	38.1% (17407)	38.2% (1681)	47.9% (23)
D. Very good	36.2% (16523)	32.8% (1443)	33.3% (16)
Total	**100.0% (45661)**	**100.0% (4397)**	**100.0% (48)**

32. How much time do you spend watching television or videos away from school?



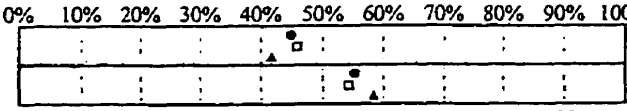
	Province	District	School
A. Less than an hour per week	16.5% (7476)	19.9% (867)	14.6% (7)
B. 1-10 hours per week	44.4% (20127)	49.4% (2155)	52.1% (25)
C. 10-20 hours per week	21.0% (9518)	18.1% (792)	27.1% (13)
D. More than 20 hours per week	18.1% (8225)	12.6% (550)	6.3% (3)
Total	**100.0% (45346)**	**100.0% (4364)**	**100.0% (48)**

33. Like to watch TV movie programs away from school.



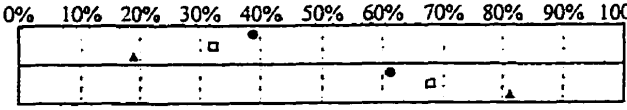
	Province	District	School
Yes	78.0% (36430)	78.4% (3533)	75.0% (36)
No	22.0% (10251)	21.6% (974)	25.0% (12)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

34. Like to watch TV sports programs away from school.



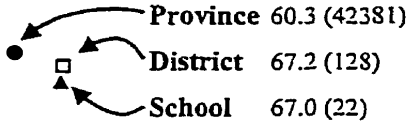
	Province	District	School
Yes	44.8% (20916)	45.8% (2064)	41.7% (20)
No	55.2% (25765)	54.2% (2443)	58.3% (28)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

35. Like to watch TV music videos away from school.



	Province	District	School
Yes	38.7% (18088)	32.1% (1448)	18.8% (9)
No	61.3% (28593)	67.9% (3059)	81.3% (39)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

Example:



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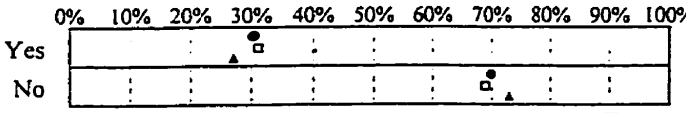
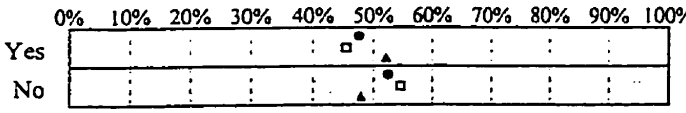
STUDENT BACKGROUND: GRADE 4

36. Like to watch TV educational programs (including news) away from school.



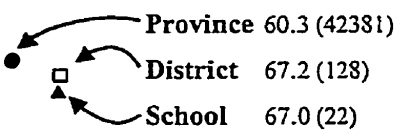
	Province	District	School
Yes	30.2% (14088)	31.1% (1403)	27.1% (13)
No	69.8% (32593)	68.9% (3104)	72.9% (35)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

37. Like to watch other TV programs (Soaps, Situation Comedies, etc.) away from school.



	Province	District	School
Yes	47.6% (22200)	45.5% (2049)	52.1% (25)
No	52.4% (24481)	54.5% (2458)	47.9% (23)
Total	**100.0% (46681)**	**100.0% (4507)**	**100.0% (48)**

Example:



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Pacific Christian School

School 6196084

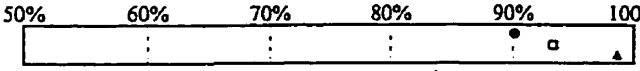
Grade 7 Results

Provincial Assessment of Reading & Writing 1998

Province of British Columbia
Ministry of Education

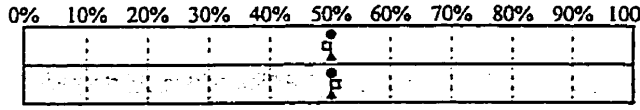
1998 BC Assessment of Reading and Writing
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 7

Participation Rates



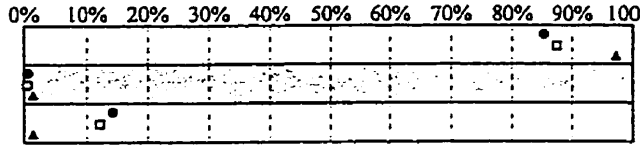
	Province	District	School
Students Participated	90.1% (47394)	93.3% (4173)	98.6% (71)
Total Students Enrolled	**100.0% (52598)**	**100.0% (4472)**	**100.0% (72)**

1. Are you a girl or a boy?



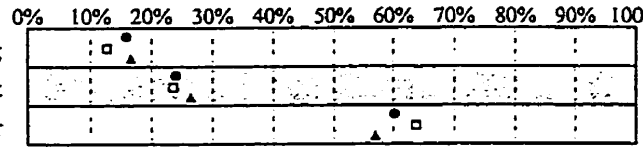
	Province	District	School
A. Girl	50.0% (24505)	49.3% (2126)	50.0% (36)
B. Boy	50.0% (24548)	50.7% (2188)	50.0% (36)
Total	**100.0% (49053)**	**100.0% (4314)**	**100.0% (72)**

2. What is the language spoken most often at home?



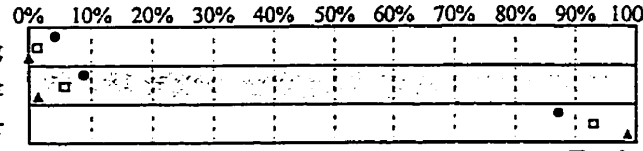
	Province	District	School
A. English	85.2% (41646)	87.4% (3757)	97.2% (70)
B. French	0.5% (266)	0.5% (21)	1.4% (1)
C. Other language	14.3% (6974)	12.1% (521)	1.4% (1)
Total	**100.0% (48886)**	**100.0% (4299)**	**100.0% (72)**

3. Do you go to learning assistance for help?



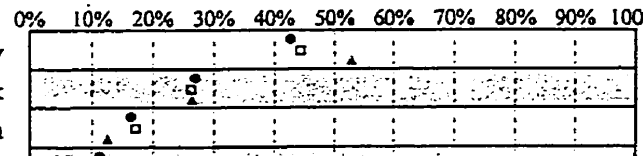
	Province	District	School
A. Presently going	15.9% (7757)	12.7% (546)	16.7% (12)
B. Gone in the past	23.9% (11649)	23.5% (1009)	26.4% (19)
C. Never	60.1% (29283)	63.8% (2735)	56.9% (41)
Total	**100.0% (48689)**	**100.0% (4290)**	**100.0% (72)**

4. Do you attend ESL classes?



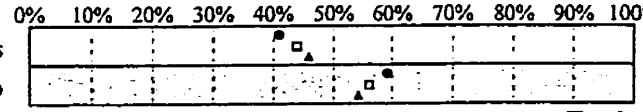
	Province	District	School
A. Presently attending	4.2% (2025)	1.3% (57)	0.0% (0)
B. Attended in the past	8.7% (4193)	5.6% (240)	1.4% (1)
C. Never	87.1% (41959)	93.0% (3951)	98.6% (70)
Total	**100.0% (48177)**	**100.0% (4248)**	**100.0% (71)**

5. How often do you read books for fun?



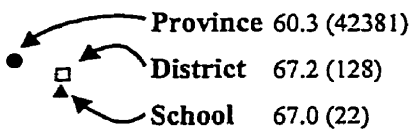
	Province	District	School
A. Almost every day	42.7% (20789)	44.4% (1896)	52.8% (38)
B. About once a week	26.9% (13091)	26.2% (1121)	26.4% (19)
C. About once a month	16.4% (7976)	17.1% (732)	12.5% (9)
D. Almost never	11.2% (5446)	10.0% (427)	6.9% (5)
E. Never	2.9% (1411)	2.3% (99)	1.4% (1)
Total	**100.0% (48713)**	**100.0% (4275)**	**100.0% (72)**

6. Do you like to read Comic books?



	Province	District	School
Yes	40.9% (20110)	43.9% (1902)	45.8% (33)
No	59.1% (29105)	56.1% (2426)	54.2% (39)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

Example:



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Pacific Christian School (9661084)
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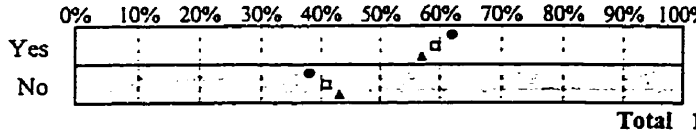
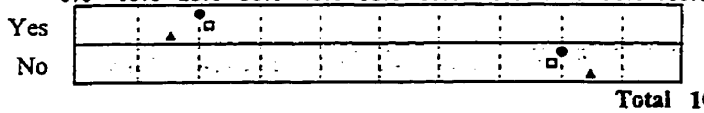
7. Do you like to read Magazines?



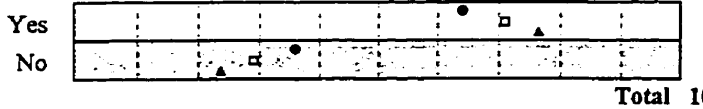
	Province	District	School
Yes	62.0% (30497)	59.2% (2562)	56.9% (41)
No	38.0% (18718)	40.8% (1766)	43.1% (31)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

8. Do you like to read Newspapers?



	Province	District	School
Yes	20.0% (9867)	21.6% (937)	15.3% (11)
No	80.0% (39348)	78.4% (3391)	84.7% (61)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

9. Do you like to read Fiction books?

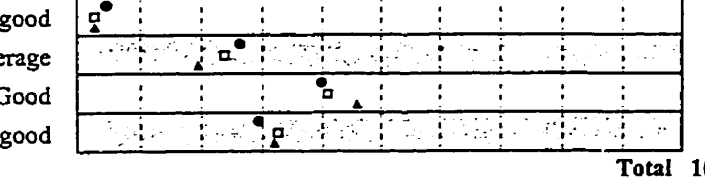


	Province	District	School
Yes	64.0% (31520)	71.0% (3073)	76.4% (55)
No	36.0% (17695)	29.0% (1255)	23.6% (17)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

10. Do you like to read Non-fiction books?

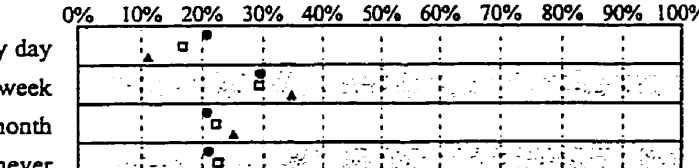
	Province	District	School
Yes	38.6% (18981)	42.8% (1854)	40.3% (29)
No	61.4% (30234)	57.2% (2474)	59.7% (43)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

11. How good are you at reading?



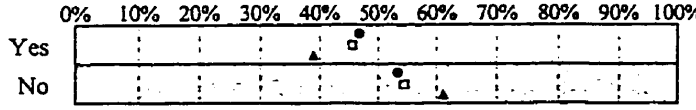
	Province	District	School
A. Not very good	4.6% (2255)	2.8% (119)	2.8% (2)
B. Average	26.2% (12837)	23.8% (1023)	19.4% (14)
C. Good	39.8% (19490)	40.9% (1761)	45.8% (33)
D. Very good	29.3% (14328)	32.6% (1403)	31.9% (23)
Total	**100.0% (48910)**	**100.0% (4306)**	**100.0% (72)**

12. How often do you write for fun?



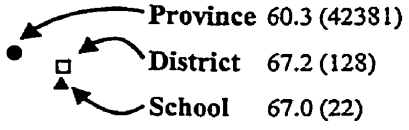
	Province	District	School
A. Almost every day	20.7% (10133)	16.8% (722)	11.1% (8)
B. About once a week	29.5% (14398)	29.3% (1261)	34.7% (25)
C. About once a month	20.7% (10125)	22.2% (955)	25.0% (18)
D. Almost never	21.0% (10250)	22.6% (971)	20.8% (15)
E. Never	8.1% (3945)	9.1% (392)	8.3% (6)
Total	**100.0% (48851)**	**100.0% (4301)**	**100.0% (72)**

13. Do you like to write Letters?



	Province	District	School
Yes	46.6% (22958)	45.5% (1970)	38.9% (28)
No	53.4% (26257)	54.5% (2358)	61.1% (44)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

Example:



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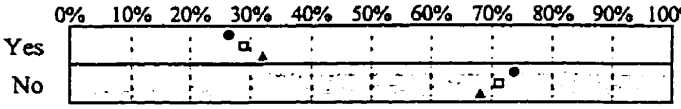
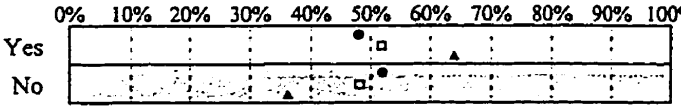
14. Do you like to write Journals?



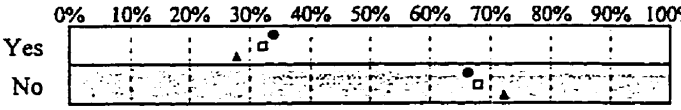
	Province	District	School
Yes	26.3% (12956)	28.9% (1249)	31.9% (23)
No	73.7% (36259)	71.1% (3079)	68.1% (49)
Total	100.0% (49215)	100.0% (4328)	100.0% (72)

15. Do you like to write Stories, Plays, Poetry?



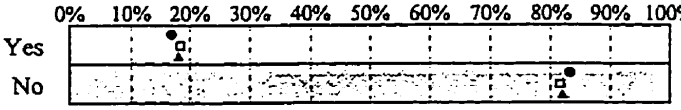
	Province	District	School
Yes	48.0% (23621)	51.8% (2244)	63.9% (46)
No	52.0% (25594)	48.2% (2084)	36.1% (26)
Total	100.0% (49215)	100.0% (4328)	100.0% (72)

16. Do you like to write Notes, Lists?



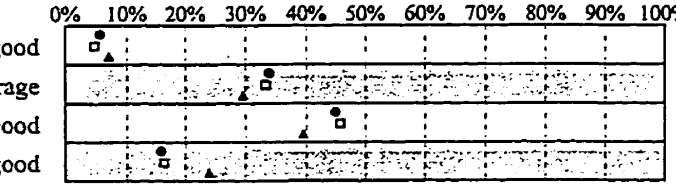
	Province	District	School
Yes	33.8% (16630)	32.1% (1390)	27.8% (20)
No	66.2% (32585)	67.9% (2938)	72.2% (52)
Total	100.0% (49215)	100.0% (4328)	100.0% (72)

17. Do you like to write Reports, Articles?



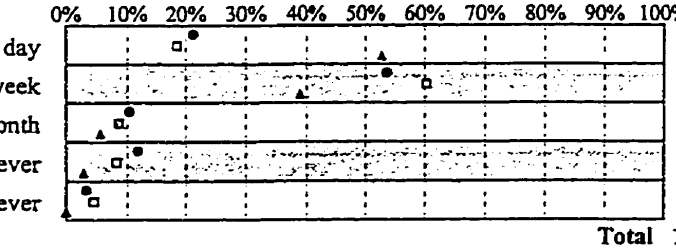
	Province	District	School
Yes	16.8% (8292)	18.4% (796)	18.1% (13)
No	83.2% (40923)	81.6% (3532)	81.9% (59)
Total	100.0% (49215)	100.0% (4328)	100.0% (72)

18. How good are you at writing?



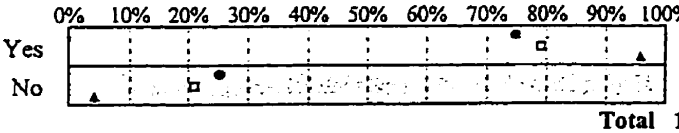
	Province	District	School
A. Not very good	5.6% (2732)	4.7% (203)	7.0% (5)
B. Average	33.8% (16499)	33.3% (1432)	29.6% (21)
C. Good	44.9% (21922)	45.7% (1966)	39.4% (28)
D. Very good	15.8% (7714)	16.3% (702)	23.9% (17)
Total	100.0% (48867)	100.0% (4303)	100.0% (71)

19. How often do you use a computer at school?



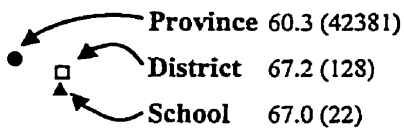
	Province	District	School
A. Almost every day	21.1% (10319)	18.5% (793)	52.8% (38)
B. About once a week	53.6% (26172)	60.3% (2588)	38.9% (28)
C. About once a month	10.3% (5039)	8.6% (369)	5.6% (4)
D. Almost never	11.7% (5733)	8.2% (352)	2.8% (2)
E. Never	3.2% (1550)	4.5% (192)	0.0% (0)
Total	100.0% (48813)	100.0% (4294)	100.0% (72)

20. Do you use the computer at school to write or word process?



	Province	District	School
Yes	74.8% (36816)	79.1% (3422)	95.8% (69)
No	25.2% (12399)	20.9% (906)	4.2% (3)
Total	100.0% (49215)	100.0% (4328)	100.0% (72)

Example:



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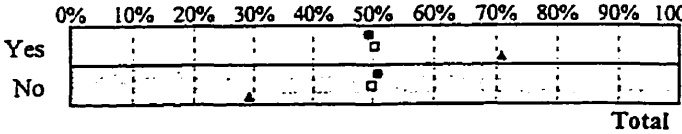
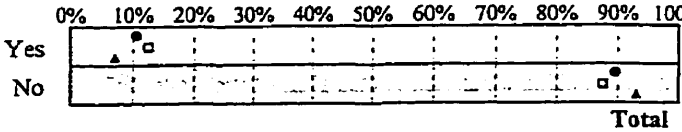
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 7

21. Do you use the computer at school to search for information?



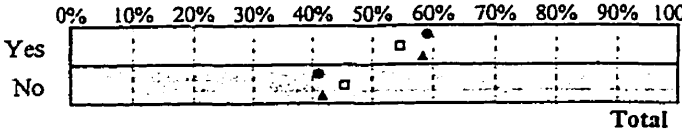
	Province	District	School
Yes	49.2% (24225)	50.3% (2175)	70.8% (51)
No	50.8% (24990)	49.7% (2153)	29.2% (21)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

22. Do you use the computer at school to send messages to other people (electronic mail)?



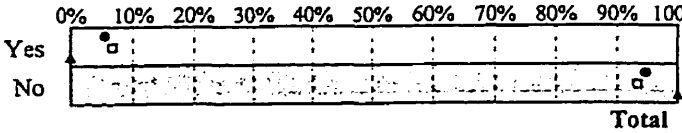
	Province	District	School
Yes	10.5% (5175)	12.5% (540)	6.9% (5)
No	89.5% (44040)	87.5% (3788)	93.1% (67)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

23. Do you use the computer at school to play games?



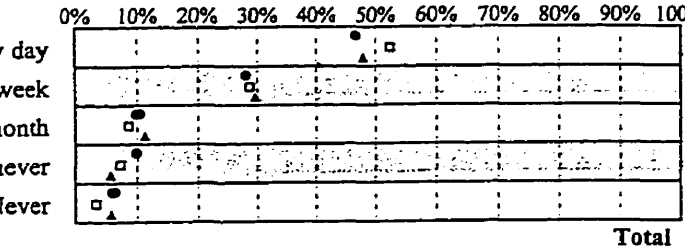
	Province	District	School
Yes	59.0% (29035)	54.6% (2363)	58.3% (42)
No	41.0% (20180)	45.4% (1965)	41.7% (30)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

24. Do not use computer at school.



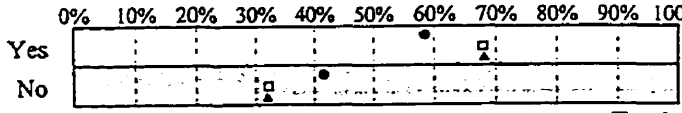
	Province	District	School
Yes	5.3% (2622)	6.6% (287)	0.0% (0)
No	94.7% (46593)	93.4% (4041)	100.0% (72)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

25. How often do you use a computer away from school?



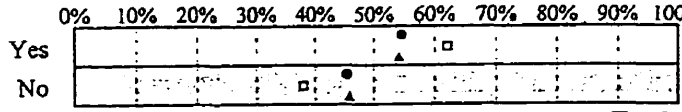
	Province	District	School
A. Almost every day	46.6% (22674)	52.5% (2251)	47.9% (34)
B. About once a week	28.0% (13618)	28.6% (1228)	29.6% (21)
C. About once a month	9.7% (4736)	8.6% (367)	11.3% (8)
D. Almost never	9.8% (4780)	7.2% (307)	5.6% (4)
E. Never	5.8% (2838)	3.2% (136)	5.6% (4)
Total	**100.0% (48646)**	**100.0% (4289)**	**100.0% (71)**

26. Do you use the computer away from school to Write or word process?



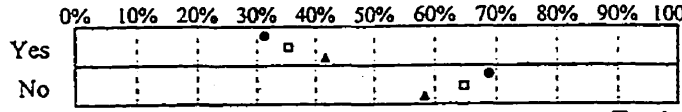
	Province	District	School
Yes	58.5% (28775)	67.9% (2937)	68.1% (49)
No	41.5% (20440)	32.1% (1391)	31.9% (23)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

27. Do you use the computer away from school to Search for information?



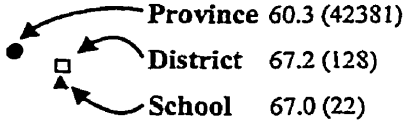
	Province	District	School
Yes	54.6% (26868)	62.0% (2684)	54.2% (39)
No	45.4% (22347)	38.0% (1644)	45.8% (33)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

28. Do you use the computer away from school to send messages to other people (electronic mail)?



	Province	District	School
Yes	31.2% (15375)	35.3% (1529)	41.7% (30)
No	68.8% (33840)	64.7% (2799)	58.3% (42)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

Example:



For each item, there are symbols representing percentages of responding students for the Province (dot: •), the District (square: ▫), and the School (triangle: ▵).

In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

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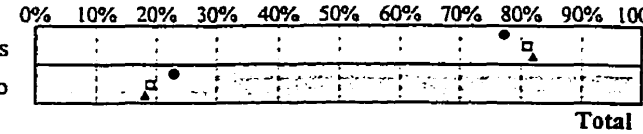
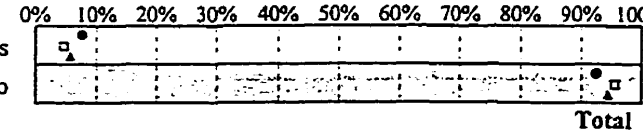
29. Do you use the computer away from school to play games?



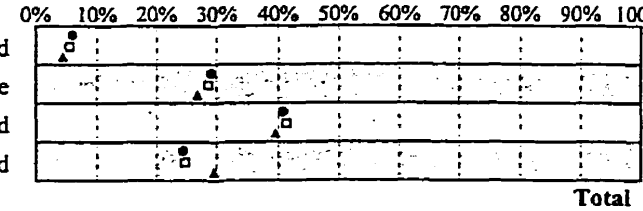
	Province	District	School
Yes	77.1% (37962)	81.0% (3507)	81.9% (59)
No	22.9% (11253)	19.0% (821)	18.1% (13)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

30. Do not use computer away from school.



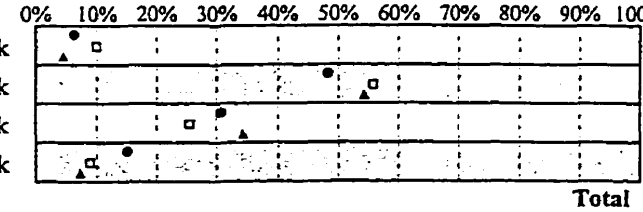
	Province	District	School
Yes	7.5% (3710)	4.4% (192)	5.6% (4)
No	92.5% (45505)	95.6% (4136)	94.4% (68)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

31. How good are you at using the computer?



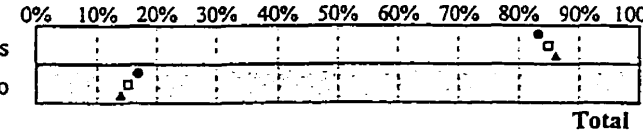
	Province	District	School
A. Not very good	5.8% (2829)	5.4% (230)	4.2% (3)
B. Average	29.1% (14181)	28.6% (1228)	26.8% (19)
C. Good	40.8% (19877)	41.3% (1772)	39.4% (28)
D. Very good	24.3% (11849)	24.7% (1060)	29.6% (21)
Total	**100.0% (48736)**	**100.0% (4290)**	**100.0% (71)**

32. How much time do you spend watching television or videos away from school?



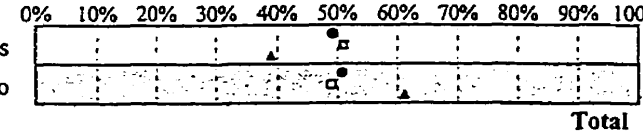
	Province	District	School
A. Less than an hour per week	6.1% (2975)	9.9% (423)	4.3% (3)
B. 1-10 hours per week	48.2% (23422)	55.8% (2388)	54.3% (38)
C. 10-20 hours per week	30.7% (14896)	25.5% (1093)	34.3% (24)
D. More than 20 hours per week	15.0% (7285)	8.8% (378)	7.1% (5)
Total	**100.0% (48578)**	**100.0% (4282)**	**100.0% (70)**

33. Like to watch TV movie programs away from school.



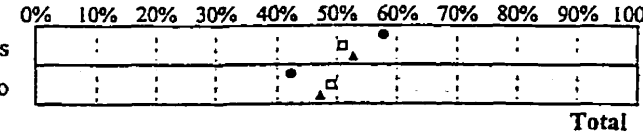
	Province	District	School
Yes	83.2% (40968)	84.9% (3674)	86.1% (62)
No	16.8% (8247)	15.1% (654)	13.9% (10)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

34. Like to watch TV sports programs away from school.



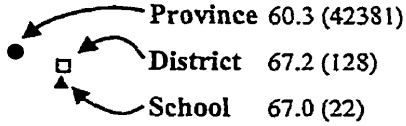
	Province	District	School
Yes	49.2% (24229)	51.0% (2209)	38.9% (28)
No	50.8% (24986)	49.0% (2119)	61.1% (44)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

35. Like to watch TV music videos away from school.



	Province	District	School
Yes	57.7% (28395)	51.0% (2206)	52.8% (38)
No	42.3% (20820)	49.0% (2122)	47.2% (34)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

Example:



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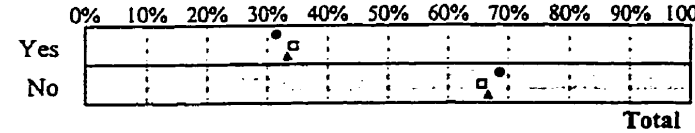
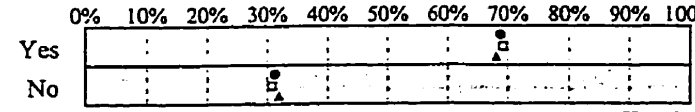
36. Like to watch TV educational programs (including news) away from school.



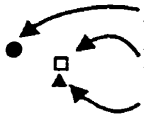
	Province	District	School
Yes	31.4% (15474)	34.3% (1485)	33.3% (24)
No	68.6% (33741)	65.7% (2843)	66.7% (48)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

37. Like to watch other TV programs (Soaps, Situation Comedies, etc.) away from school.



	Province	District	School
Yes	68.8% (33850)	69.2% (2996)	68.1% (49)
No	31.2% (15365)	30.8% (1332)	31.9% (23)
Total	**100.0% (49215)**	**100.0% (4328)**	**100.0% (72)**

Example:



For each item, there are symbols representing percentages of responding students for the Province (dot: •), the District (square: ▫), and the School (triangle: ▲).

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Pacific Christian School

School 6196084

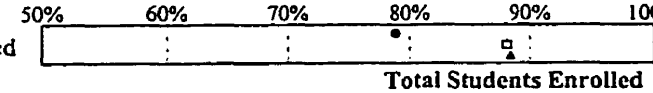
Grade 10 Results

Provincial Assessment of Reading & Writing 1998

Province of British Columbia
Ministry of Education

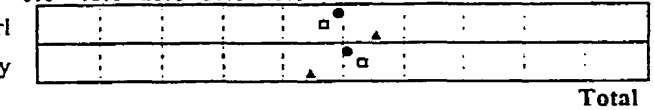
1998 BC Assessment of Reading and Writing
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 10

Participation Rates



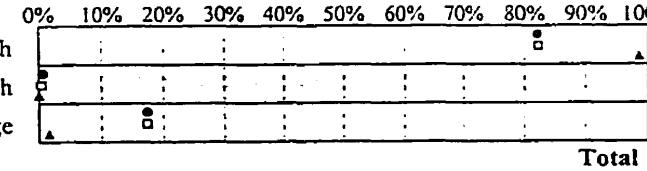
	Province	District	School
Students Participated	78.8% (42861)	88.1% (3392)	88.4% (61)
Total Students Enrolled	**100.0% (54378)**	**100.0% (3849)**	**100.0% (69)**

1. Are you a girl or a boy?



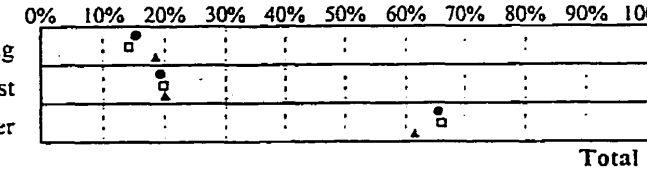
	Province	District	School
A. Girl	49.3% (21847)	46.9% (1620)	55.4% (36)
B. Boy	50.7% (22467)	53.1% (1836)	44.6% (29)
Total	**100.0% (44314)**	**100.0% (3456)**	**100.0% (65)**

2. What is the language spoken most often at home?



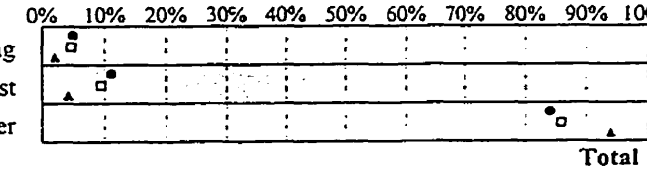
	Province	District	School
A. English	82.1% (36235)	82.3% (2832)	98.5% (64)
B. French	0.6% (266)	0.4% (13)	0.0% (0)
C. Other language	17.3% (7647)	17.3% (597)	1.5% (1)
Total	**100.0% (44148)**	**100.0% (3442)**	**100.0% (65)**

3. Do you go to learning assistance for help?



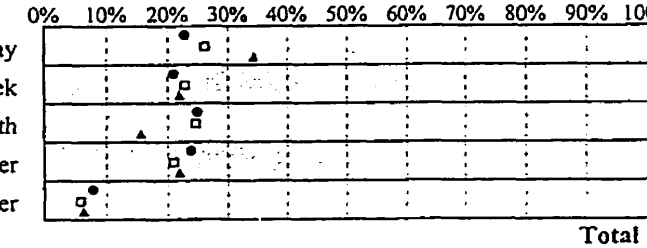
	Province	District	School
A. Presently going	15.3% (6737)	14.2% (487)	18.5% (12)
B. Gone in the past	19.2% (8475)	19.7% (678)	20.0% (13)
C. Never	65.5% (28901)	66.1% (2271)	61.5% (40)
Total	**100.0% (44113)**	**100.0% (3436)**	**100.0% (65)**

4. Do you attend ESL classes?



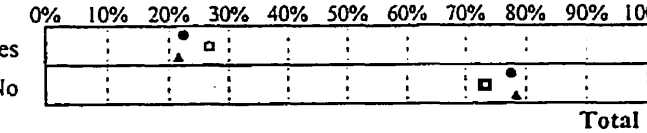
	Province	District	School
A. Presently attending	4.8% (2082)	4.6% (155)	2.0% (1)
B. Attended in the past	11.1% (4825)	9.4% (320)	4.1% (2)
C. Never	84.1% (36659)	86.0% (2912)	93.9% (46)
Total	**100.0% (43566)**	**100.0% (3387)**	**100.0% (49)**

5. How often do you read books for fun?



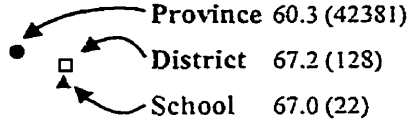
	Province	District	School
A. Almost every day	22.8% (10047)	26.0% (895)	34.4% (22)
B. About once a week	21.0% (9250)	22.8% (783)	21.9% (14)
C. About once a month	24.8% (10935)	24.5% (842)	15.6% (10)
D. Almost never	23.8% (10490)	21.0% (721)	21.9% (14)
E. Never	7.7% (3420)	5.7% (196)	6.3% (4)
Total	**100.0% (44142)**	**100.0% (3437)**	**100.0% (64)**

6. Do you like to read Comic books?



	Province	District	School
Yes	22.4% (9945)	26.6% (921)	21.5% (14)
No	77.6% (34480)	73.4% (2538)	78.5% (51)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

Example:



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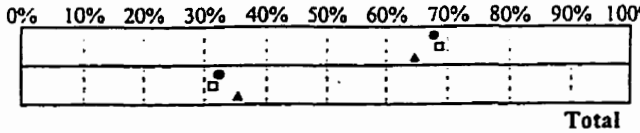
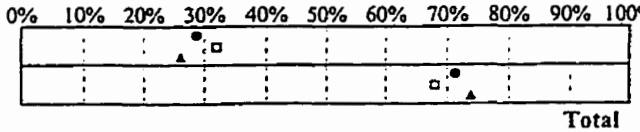
Pacific Christian School (9661084)
STUDENT BACKGROUND: GRADE 10

7. Do you like to read Magazines?



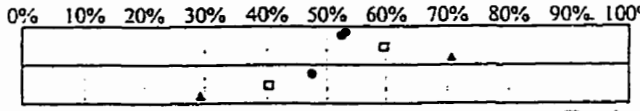
	Province	District	School
Yes	67.6% (30042)	68.6% (2373)	64.6% (42)
No	32.4% (14383)	31.4% (1086)	35.4% (23)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

8. Do you like to read Newspapers?



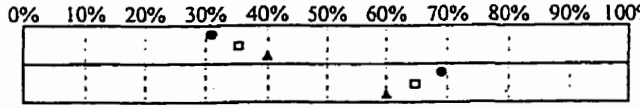
	Province	District	School
Yes	28.6% (12726)	32.0% (1107)	26.2% (17)
No	71.4% (31699)	68.0% (2352)	73.8% (48)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

9. Do you like to read Fiction books?



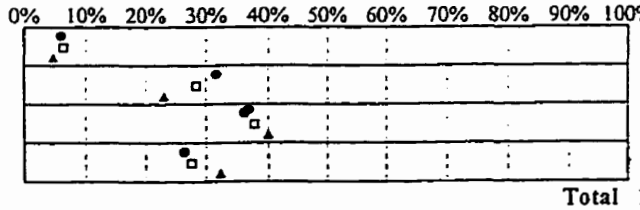
	Province	District	School
Yes	52.5% (23326)	59.7% (2065)	70.8% (46)
No	47.5% (21099)	40.3% (1394)	29.2% (19)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

10. Do you like to read Non-fiction books?



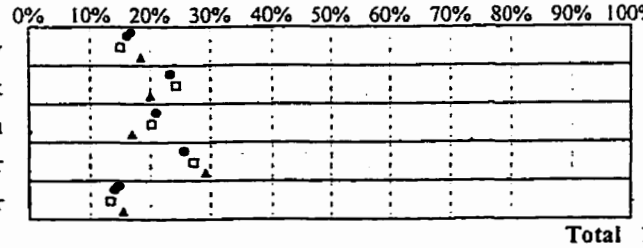
	Province	District	School
Yes	30.9% (13745)	35.3% (1221)	40.0% (26)
No	69.1% (30680)	64.7% (2238)	60.0% (39)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

11. How good are you at reading?



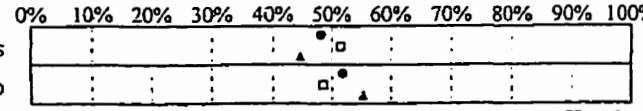
	Province	District	School
A. Not very good	5.8% (2571)	6.2% (215)	4.6% (3)
B. Average	31.7% (14002)	28.4% (978)	23.1% (15)
C. Good	36.2% (15996)	37.8% (1302)	40.0% (26)
D. Very good	26.4% (11667)	27.6% (950)	32.3% (21)
Total	100.0% (44236)	100.0% (3445)	100.0% (65)

12. How often do you write for fun?



	Province	District	School
A. Almost every day	16.1% (7118)	15.0% (515)	18.5% (12)
B. About once a week	23.4% (10327)	24.3% (836)	20.0% (13)
C. About once a month	20.9% (9251)	20.2% (695)	16.9% (11)
D. Almost never	25.6% (11319)	27.3% (937)	29.2% (19)
E. Never	13.9% (6156)	13.2% (455)	15.4% (10)
Total	100.0% (44171)	100.0% (3438)	100.0% (65)

13. Do you like to write Letters?



	Province	District	School
Yes	48.1% (21362)	51.5% (1781)	44.6% (29)
No	51.9% (23063)	48.5% (1678)	55.4% (36)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

Example:

For each item, there are symbols representing percentages of responding students for the Province (dot: ●), the District (square: ■), and the School (triangle: ▲).

In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

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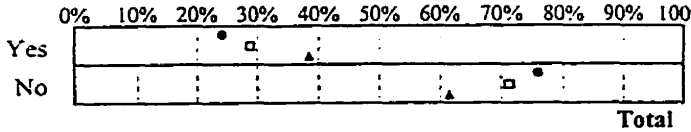
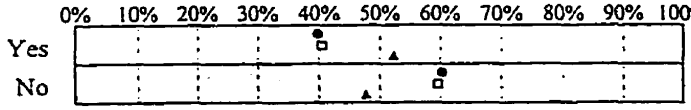
14. Do you like to write Journals?



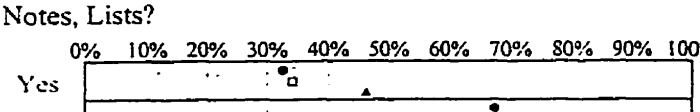
	Province	District	School
Yes	24.1% (10726)	28.8% (996)	38.5% (25)
No	75.9% (33699)	71.2% (2463)	61.5% (40)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

15. Do you like to write Stories, Plays, Poetry?



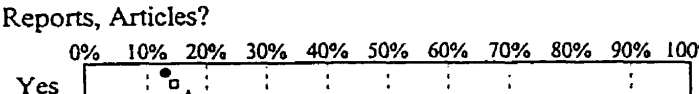
	Province	District	School
Yes	39.7% (17649)	40.4% (1398)	52.3% (34)
No	60.3% (26776)	59.6% (2061)	47.7% (31)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

16. Do you like to write Notes, Lists?



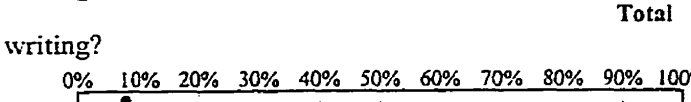
	Province	District	School
Yes	32.5% (14454)	34.1% (1180)	46.2% (30)
No	67.5% (29971)	65.9% (2279)	53.8% (35)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

17. Do you like to write Reports, Articles?



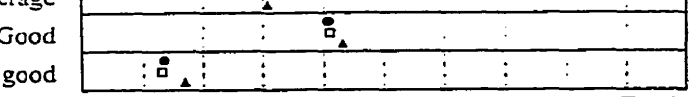
	Province	District	School
Yes	13.0% (5796)	14.5% (501)	16.9% (11)
No	87.0% (38629)	85.5% (2958)	83.1% (54)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

18. How good are you at writing?



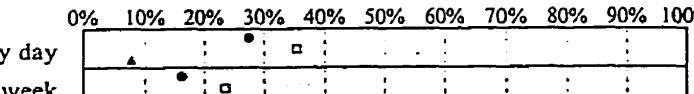
	Province	District	School
A. Not very good	7.7% (3386)	7.4% (255)	9.2% (6)
B. Average	38.4% (16988)	38.6% (1330)	30.8% (20)
C. Good	40.5% (17911)	40.9% (1410)	43.1% (28)
D. Very good	13.4% (5908)	13.0% (449)	16.9% (11)
Total	**100.0% (44193)**	**100.0% (3444)**	**100.0% (65)**

19. How often do you use a computer at school?



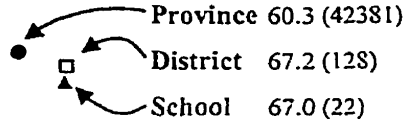
	Province	District	School
A. Almost every day	27.4% (12124)	35.3% (1216)	7.7% (5)
B. About once a week	16.2% (7156)	23.6% (811)	18.5% (12)
C. About once a month	16.1% (7094)	12.4% (427)	13.8% (9)
D. Almost never	28.8% (12701)	19.8% (681)	43.1% (28)
E. Never	11.5% (5098)	8.9% (307)	16.9% (11)
Total	**100.0% (44173)**	**100.0% (3442)**	**100.0% (65)**

20. Do you use the computer at school to write or word process?



	Province	District	School
Yes	54.4% (24184)	67.6% (2338)	55.4% (36)
No	45.6% (20241)	32.4% (1121)	44.6% (29)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

Example:



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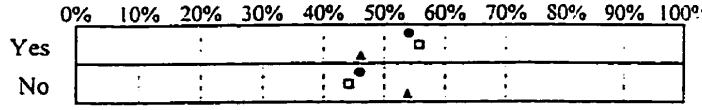
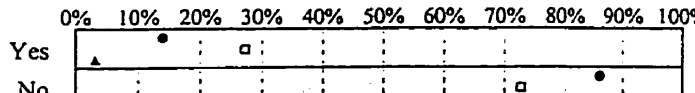
21. Do you use the computer at school to search for information?



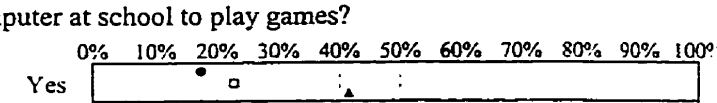
	Province	District	School
Yes	54.0% (24003)	55.8% (1930)	46.2% (30)
No	46.0% (20422)	44.2% (1529)	53.8% (35)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

22. Do you use the computer at school to send messages to other people (electronic mail)?



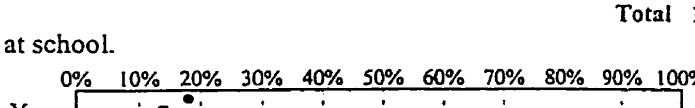
	Province	District	School
Yes	13.9% (6186)	27.3% (946)	3.1% (2)
No	86.1% (38239)	72.7% (2513)	96.9% (63)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

23. Do you use the computer at school to play games?



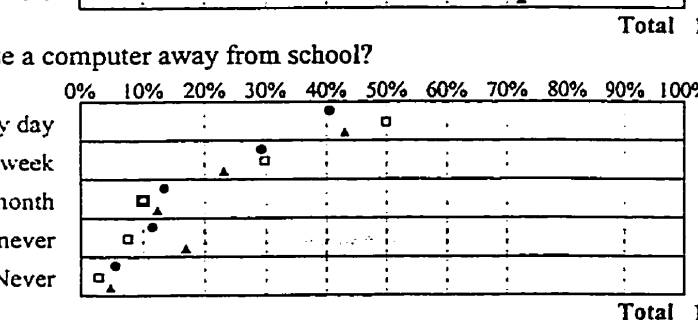
	Province	District	School
Yes	17.3% (7707)	22.7% (785)	41.5% (27)
No	82.7% (36718)	77.3% (2674)	58.5% (38)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

24. Do not use computer at school.



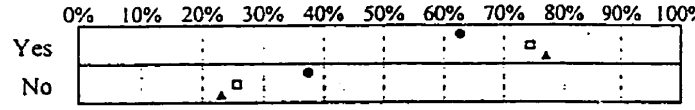
	Province	District	School
Yes	18.0% (7980)	13.9% (481)	27.7% (18)
No	82.0% (36445)	86.1% (2978)	72.3% (47)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

25. How often do you use a computer away from school?



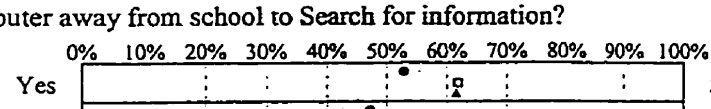
	Province	District	School
A. Almost every day	40.5% (17863)	49.9% (1712)	43.1% (28)
B. About once a week	29.3% (12907)	29.8% (1023)	23.1% (15)
C. About once a month	13.4% (5908)	10.0% (343)	12.3% (8)
D. Almost never	11.5% (5056)	7.5% (256)	16.9% (11)
E. Never	5.4% (2386)	2.8% (95)	4.6% (3)
Total	**100.0% (44120)**	**100.0% (3429)**	**100.0% (65)**

26. Do you use the computer away from school to Write or word process?



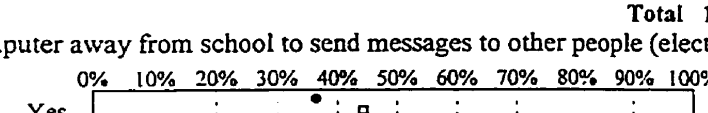
	Province	District	School
Yes	62.7% (27834)	74.3% (2570)	76.9% (50)
No	37.3% (16591)	25.7% (889)	23.1% (15)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

27. Do you use the computer away from school to Search for information?



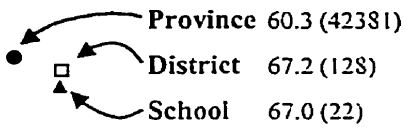
	Province	District	School
Yes	52.8% (23460)	61.9% (2140)	61.5% (40)
No	47.2% (20965)	38.1% (1319)	38.5% (25)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

28. Do you use the computer away from school to send messages to other people (electronic mail)?



	Province	District	School
Yes	36.4% (16153)	44.4% (1536)	38.5% (25)
No	63.6% (28272)	55.6% (1923)	61.5% (40)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

Example:



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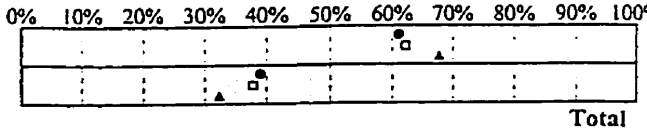
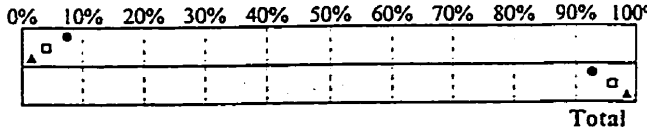
29. Do you use the computer away from school to play games?



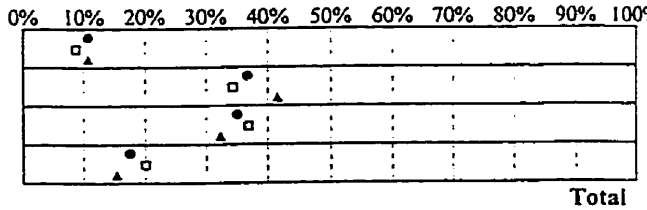
	Province	District	School
Yes	61.0% (27116)	62.2% (2150)	67.7% (44)
No	39.0% (17309)	37.8% (1309)	32.3% (21)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

30. Do not use computer away from school.



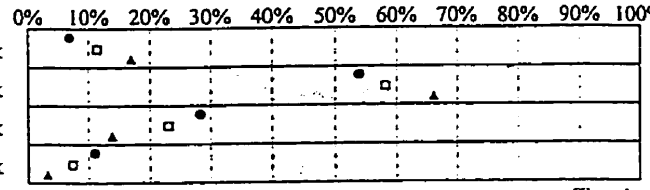
	Province	District	School
Yes	7.3% (3265)	4.0% (137)	1.5% (1)
No	92.7% (41160)	96.0% (3322)	98.5% (64)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

31. How good are you at using the computer?



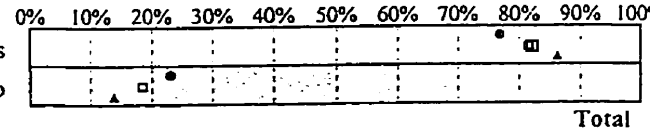
	Province	District	School
A. Not very good	10.8% (4749)	8.7% (300)	10.8% (7)
B. Average	36.7% (16192)	34.3% (1180)	41.5% (27)
C. Good	35.0% (15460)	36.9% (1269)	32.3% (21)
D. Very good	17.5% (7720)	20.1% (690)	15.4% (10)
Total	100.0% (44121)	100.0% (3439)	100.0% (65)

32. How much time do you spend watching television or videos away from school?



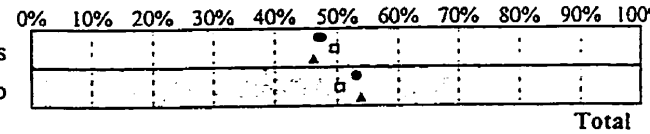
	Province	District	School
A. Less than an hour per week	6.8% (2981)	11.5% (393)	16.9% (11)
B. 1-10 hours per week	53.9% (23747)	58.1% (1988)	66.2% (43)
C. 10-20 hours per week	28.3% (12480)	23.1% (790)	13.8% (9)
D. More than 20 hours per week	11.0% (4861)	7.3% (250)	3.1% (2)
Total	100.0% (44069)	100.0% (3421)	100.0% (65)

33. Like to watch TV movie programs away from school.



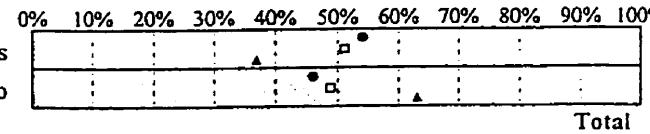
	Province	District	School
Yes	76.9% (34145)	81.6% (2821)	86.2% (56)
No	23.1% (10280)	18.4% (638)	13.8% (9)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

34. Like to watch TV sports programs away from school.



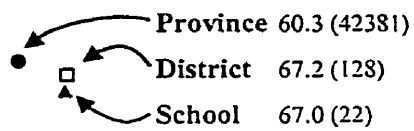
	Province	District	School
Yes	46.9% (20833)	49.6% (1714)	46.2% (30)
No	53.1% (23592)	50.4% (1745)	53.8% (35)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

35. Like to watch TV music videos away from school.



	Province	District	School
Yes	54.0% (24008)	51.1% (1769)	36.9% (24)
No	46.0% (20417)	48.9% (1690)	63.1% (41)
Total	100.0% (44425)	100.0% (3459)	100.0% (65)

Example:



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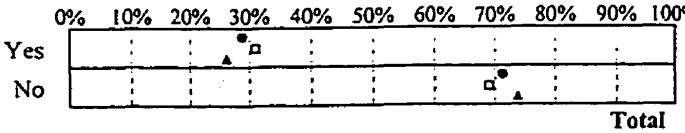
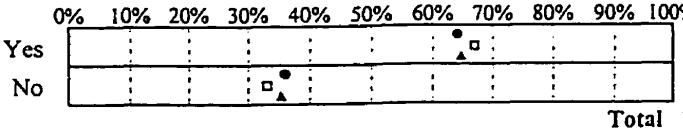
36. Like to watch TV educational programs (including news) away from school.



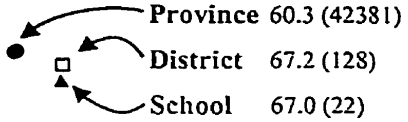
	Province	District	School
Yes	28.7% (12765)	31.0% (1071)	26.2% (17)
No	71.3% (31660)	69.0% (2388)	73.8% (48)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

37. Like to watch other TV programs (Soaps, Situation Comedies, etc.) away from school.



	Province	District	School
Yes	64.0% (28440)	66.9% (2314)	64.6% (42)
No	36.0% (15985)	33.1% (1145)	35.4% (23)
Total	**100.0% (44425)**	**100.0% (3459)**	**100.0% (65)**

Example:



For each item, there are symbols representing percentages of responding students for the Province (dot: ●), the District (square: ▫), and the School (triangle: ▲).

In addition, the numerical percentages and the numbers of students responding to each option are shown to the right of the graph.

Provincial enrollments are public and independent schools. District enrollments are independent schools only.

APPENDIX E

Teacher Questionnaire

TEACHER QUESTIONNAIRE

Dear Colleague:
I would appreciate a few minutes of your time to complete the following questionnaire. I am currently doing a research project for Pacific Christian School on the feasibility of implementing a virtual school here. I am collecting responses from all groups that will be affected by the implementation of a virtual school - students, teachers, administrators. Your views are important and valued. Please be assured that you will remain anonymous and your name will not appear in the research findings. I do need you to sign below to allow me to use your answers in the survey. Thanks for your assistance.
Berkley Consent signature:_____

1.) Do you have personal access to a computer at home?
If "yes" continue on, if "no", go to question #2

i.) Describe your computer (i.e.-Mac or PC) and state its speed.

ii.) Does your computer hook up to the Internet?
What is the modem type(phone/cable)?
What speed is the modem(14.4, 28.8, 33.6, 56K)?

iii.) How many hours do you spend on the Internet?
In one day?_____
In one week? _____

iv.) What do you do on the net? Please check as many as apply to you.

look for educational resources ;_____ take courses;_____
download software;_____ e-mail;_____ research;_____
other;_____

2.) i.) Please indicate your areas of teaching expertise using the checklist below:

Physics_____	English_____	French_____
Biology_____	Math_____	Chemistry_____
History_____	Social Studies____	Christian Perspectives_____
Grade K-3_____	Grade 4-7_____	Computer/Technology_____

Other (specify name) _____

ii.) Would you be interested in teaching all or part of an on-line course in your area of expertise (a typical course would need 5-6 hours per week instruction time)? Place a check mark to indicate which course.

Physics_____	English_____	French_____
Biology_____	Math_____	Chemistry_____
History_____	Social Studies____	Christian Perspectives_____
Grade K-3_____	Grade 4-7_____	Computer/Technology_____

Other (specify name) _____

iii.) What time of the day would you consider teaching an on-line course?

3.) Have you experienced on-line videoconference on the Internet?
If so, what topics were discussed or learned?

4.) Indicate what your concerns/fears might be as a teacher entering this new realm of instruction?

5.) Listed below are a variety of learning styles for students. Please indicate what percentage of time your classes spend on each of the activities below:

Group work_____	Tests_____	Individual reports_____
Presentations (individual)_____		Presentations (collaborative)_____

Other (please explain)_____