An Advanced Placement Online Feasibility Study

by
Gale Ann Parchoma
B.Ed., University of Saskatchewan, 1988
B.A. (Honours) University of Saskatchewan, 1993

A Thesis Submitted to the Faculty of Graduate Studies in Partial Fulfillment of the Requirements for the Degree of

MASTER OF ARTS

in Education

We accept this thesis as conforming to the required standard

[redacted]

Dr. Geoffrey Potter, Supervisor (Department of Communications and Social Foundations)

[redacted]

Dr. Robert Fowler, Department Member (Department of Communications and Social Foundations)

[redacted]

Dr. Laurie Rae Baxter, Department Member (Department of Communications and Social Foundations)

[redacted]

Dr. Myer Horowitz, External Examiner (Adjunct Professor of Education)

University of Victoria

Supervisor: Dr. Geoffrey Potter

ABSTRACT

This study explores Grades 11 and 12 gifted and talented learners' attitudes toward the concept of enrolling in Advanced Placement courses in a virtual learning environment. The research investigates British Columbian student responses to the concept of enrolling in challenging course work offered in an Internet setting, which Advanced Placement courses students would find most appealing, and which support components students would identify as needed, helpful, and ideal in an Internet-based learning environment.

Quantitative and qualitative methodologies were combined in this case study. Quantitative data was used to form broader generalizations. Qualitative data was used to describe rationales underpinning participants' responses and to contextualize those responses in the current involvement of British Columbian secondary schools in the Advanced Placement program.

Study findings suggest that a well-crafted Advanced Placement Online program, designed to meet the needs and expectations of gifted and talented senior secondary students, could be successfully developed by British Columbia's Open School and delivered to students through British Columbia's distance education centers.

[redacted]

Dr. Geoffrey Potter, Supervisor (Department of Communications and Social Foundations)

[redacted]

Dr. Robert Fowler, Department Member (Department of Communications and Social Foundations)

[redacted]

Dr. Laurie Rae Baxter, Department Member (Department of Communications and Social Foundations)

[redacted]

Dr. Myer Horowitz, External Examiner (Adjunct Professor of Education)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

A thesis is the culmination of a collaborative process. The completion of this thesis has been made possible by the extraordinary efforts of my committee members: Geoff Potter, Bob Fowler, and Laurie Baxter. Without the support of the Open School, especially the efforts of Barry Carbol and Tim Winkelmans, this project would not have begun. Ted Riecken's guidance, at the pilot stage of this study, was essential. A special thanks is owed to George Ewonus for all of the information he provided.

Numerous district-level and school-level administrators, along with eight teachers, were kind enough to accommodate my request to carry out this study in their schools. Ten students assisted me in shaping the research through their participation in the pilot study. In the full study, 103 students took time out of their busy lives to share their thoughts with me. I acknowledge these gifts of time and insight.

Brett Lawrason and my former Advanced Placement students provided the inspiration for this work.

A special acknowledgment belongs to my daughters, April and Elyse, whose love and sense of adventure illuminate my life and work.

CHAPTER ONE

Context of the Study

Providing access to "relevant, high quality educational programs" that "meet the needs of a wide variety of [K-12] students with varying learning abilities" in order to "prepare them for higher education and/or the world of work" is the mandate of British Columbia's Ministry of Education (Government of British Columbia, 1998, p.1). Around the globe, as well as in British Columbia, provision of educational programs that do meet the needs of academically and geographically diverse learners has sparked government initiatives in the area of distance learning (Barker & Dickson, 1996; Kowach & Schwier, 1997; Jonasson, 1992; Province of British Columbia, Ministry of Education, Skills and Training, 1998a). In British Columbia, the challenge of providing quality education to students in rural areas has been addressed by the establishment of nine distance education centers, each equipped with the technology to support Web-based instruction. (Province of British Columbia, Ministry of Education, Skills and Training, 1998a). Currently, senior secondary students, in remote and rural areas, are ensured access to instruction in courses required for graduation via electronic delivery through the Connect Program (Province of British Columbia Ministry of Education, Skills and Training, 1998a, p.2; Province of British Columbia Ministry of Education, Skills and Training, 1998b, p.5). Expanding current Web-based course offerings to meet the needs of gifted and talented students who wish to challenge themselves in subject areas of previous success is the focus of this study.

Purpose of the Study

The purpose of this study is to document and describe gifted and talent students' attitudes toward enrolling in AP programs delivered over the Internet through the Open School (OS). In this study, gifted and talented students were defined as Grades 11 and 12 students who have achieved A standing in one or more provincially examinable course areas. The research investigated student responses to the concept of enrolling in AP courses in an Internet setting, which courses students found most attractive, and which support components students identified as needed, helpful, and ideal in an Internet learning environment.

Dichotomy of Voice

Two voices are woven into the fabric of this document. I have been unable to reconcile the subjective elements that underpin the autobiographical account of the events which were the genesis of this work with the objective and statistical data, which emerged as this work progressed, into one unified tone. Without the emotive hues which mark the former, the latter would have never come into existence; therefore, two voices: the narrative voice of a teacher-advocate and the expository voice of a researcher, coexist in this work.

The Origins of the Study

My interest in conducting a study of student response to the concept of participating in the Advanced Placement (AP) program in an online setting rises out of my experience as a classroom teacher and my awareness of the current trends toward less availability of AP courses in small school settings.

In 1995, my principal at River Valley Secondary School* (RVSS), in River Valley,* BC, became concerned about the reasons why RVSS graduates who had achieved A averages in provincially examinable courses were not being considered for scholarship awards by BC universities or colleges. He contacted a number of members of scholarship committees and found that students who had AP or International

* *The names of the school and the town have been changed.*

Baccalaureate (IB) credits were preferred over those students who only had provincial credits. He researched both programs and decided that the AP program would be more adaptable to a small school setting than the IB program. As a result of this decision, he asked me to take the necessary training and to begin an AP course at RVSS. In the Spring semester of 1996 I taught the AP English Literature and Composition course to a cohort of thirteen students. Four of these students received major scholarships (ranging from tuition to $25,000 US per annum): one student received a tuition scholarship to BCIT; one received an entrance scholarship to the University of Victoria, two received entrance scholarships to the University of British Columbia, and one received a full scholarship to Harvard. In 1997, I taught the AP English Language and Composition course to twelve students; four members of this cohort received major scholarship offers, one of which was $12,000 per annum to attend Queen's; two students who had given the College Board permission to enter their AP grades in the board's data base were recruited by other out-of-province universities.

In a larger setting these results might not seem particularly remarkable, but in a small rural school, in a community where the average working individual earns less that $20,000 annually and where only 46.3 percent of individuals participate in the economy – as compared to 66.4 percent, provincially (Statistics Canada, 1998) – these results were seen as significant achievements; both students and parents expressed new confidence that school attendance at RVSS could provide gifted and talented students with very real opportunities to pursue post-secondary academic studies. The sense that academic achievement could erase economic and geographic boundaries ignited a stronger sense of efficacy in the school community. Plans were made to form Vertical Teams of teachers who would work with late intermediate and early junior high students in English Language Arts classes to prepare more students for entry into AP English courses. Plans to expand AP course offerings into Math and Science were being discussed.

However, in 1998 budget restraints resulted in cutting the AP program altogether. Since RVSS had in the interim become the smallest school in a newly amalgamated district, I checked with each of the other schools in our new district to see if they were

still able to offer AP courses. I found that RVSS had, indeed, been the last school in the district to offer an AP course. I contacted George Ewonus, the head of AP Canada, and found that comparatively few small schools (schools with Grades 11-12 enrollments under 500 students) were still able to offer AP programs anywhere in Canada. He added that offering AP courses in larger schools was not "getting any easier" either (personal communication, January, 1998). I reviewed the *AP Canada 1997 Report Package* and found that while AP program offerings remained consistent in BC schools (126 BC schools offered AP courses in 1993 and 128 schools offered AP courses in 1997), these offerings were becoming somewhat concentrated in larger high schools. Considering the evidence from this broader context that suggested the future of classroom-based AP course offerings was not especially promising, I decided to investigate the possibility of offering AP courses in a virtual learning environment.

In January of 1998, I contacted Barry Carbol, the director of the Open School in BC, and proposed the concept of developing AP online courses at the Open School (OS). He invited me to meet with him and selected members of the board of directors in March. At a follow-up meeting, in late April, I was asked to prepare a needs analysis. The needs analysis was to be designed to address the equity issue that initiated this inquiry, as well as the possibility of expanding AP offerings in larger high schools in order to make the program economically feasible. I presented OS with the needs analysis report in June. That report led to a request to prepare a business plan, which I delivered to OS in August. In October, I negotiated a contract to conduct a feasibility study of student responses to the concept of taking AP courses online through OS. On June 11, 1999, I submitted the findings of this study and presented an executive summary of its results and recommendations to the OS Board of Directors. My understanding of the discussion that followed is that a concerted effort will be made to ensure online AP course work will be developed in the near future.

The AP Challenge

My interest in the AP program began primarily with an interest in providing rural students from an economically depressed region with an opportunity to access scholarship funding. However, my experiences as an AP teacher profoundly deepened my commitment to the AP program as I worked through the challenges it offered. The flexibility in curricula; the options for resource selection to match individual student interests; the opportunity for students, as well as teachers, to undertake a difficult a challenge against which to test themselves: each served to build a community of reflective and critical thinkers. In these mini-communities a sense of collaboration and mutual support formed as the foundation for mutual success because competition was external (on a global basis) rather than among group members. I came to believe that the AP program offers a rich and rewarding experience to most students who choose to participate, rather than only for those students who achieve top grades and scholarship offers. I hope the richness of community that formed in a classroom setting can be emulated in a well-designed electronic learning environment. My challenge in undertaking this study was to bracket my enthusiasm toward seeing an AP online program, open to as many students as possible, become a reality.

Research Design

Two distinct kinds of data were needed in this study: (1) broad statistical data was needed to make the findings generalizable, significant in terms of the population of gifted and talented British Columbian senior secondary students; (2) detailed, in-depth information about the rationales and motivations which prompted participant responses was needed to gain a richer understanding of participant perspectives. Therefore, both quantitative and qualitative methodologies were employed in this study.

The quantitative section of the study was designed as an *ex post facto*, co-relational study (Tuckman, 1994). Concern about the variable of previous knowledge of and experience with the Advanced Placement program, as well as the recognition of AP credits by external agencies, on participant attitudes toward the AP program prompted the inclusion of a pretest-treatment-posttest feature to measure benchmark awareness

levels and to mediate the possible influence of this variable on the outcomes of the study. Nominal data were collected to determine basic awareness and experience benchmarks; ordinal data, reported on a Likert scale, were collected to determine degrees of understanding, interest, and concern about the concepts of participation in the AP program in general, and about participating in an AP program online.

The qualitative section of the study was conducted through a series of focus groups, made up of volunteers who had responded to the quantitative questionnaires. Because in-depth understanding of individual responses to issues, detail about selected issues and the context from which individuals were making their responses was needed, a case-study approach was selected for the qualitative portion of the study (Creswell, 1998).

Analysis of the collected data, in terms of the broad context of current practice in British Columbia, required adding a third layer of statistical inquiry into enrollment data and AP participation data via exploration of Ministry of Education records and AP Canada reports. Information collected from government policy documents added a further dimension to this case study.

Aggregation and analysis of these three layers of data into predictions about the feasibility of offering a successful AP online program, designed to meet the expectations and the needs of prospective students, conclude this study.

Scope of the Study

Participants for this study were sought from eight school districts. While district personnel granted approval for the study in each of the eight districts, school-based administrators in one of the districts cited student and supervisory personnel time restraints to opt out of the study and in a second district only two students who met the criteria and who had time to participate could be identified by school administration. Therefore, only six districts were involved. From these six districts, eight schools chose to participate.

The six participating districts did allow for regional representation of the British Columbian secondary school population. Districts from the North Eastern, Central

Interior, Southern Interior, and South Coast regions participated. Participating school districts' total enrollments ranged from 3111 to 23,990 and participating schools' enrollments ranged from 158 to 1417 students (British Columbia Data and Transcripts Branch, 1997); therefore, both urban and rural districts and schools were represented in the study.

Participants

Gifted and talented students who were currently enrolled in Grades 11 and 12 students were recruited. The criterion used to select individual participants was having achieved an A standing in one or more provincially examinable course areas prior to participating in the study. Student participants were recruited through their schools.

School and district level administrators were asked for permission to conduct the study at each site. School administrators were asked to provide names of students who met the criterion. At one site participants were recruited, at the request of school administration, through brief presentations about the study to AP classes. Prospective participants were given recruitment letters, as well as letters of understanding for their parents or guardians. Those students who chose to participate returned signed letters of consent on the day of the study.

One hundred and three participants completed the questionnaires. One questionnaire was discarded because of incomplete responses. From these one hundred and two participants, twelve participants were asked to also take part in focus group discussions. Three groups of four participants participated in scheduled focus groups. Those students who did not participate in focus group sessions were invited to provide written responses to any or all of the focus group questions, which were distributed to all participants. Fourteen participants responded to this invitation.

Neither gender nor ethnic information was formally collected; however, participants were approximately half male and half female and members of a variety of ethnic groups participated in the study. Socioeconomic data were collected through the questionnaires and these data reflect a range of socioeconomic backgrounds.

Limitations of this Study

The criterion used to identify gifted and talented students for this study was limited to achievement of an A standing in one or more provincially examinable course areas. This definition is comprehensively neither inclusive nor accurate. The multiplicity of challenges and obstacles that can impede academic achievement affect gifted and talented learners as strongly as other groups of learners. Therefore, previous achievement cannot be broadly used as an isolated measure of academic potential. It was used as an isolated measure in this study for a pragmatic purpose: as a readily available measure it was useful to school administrators as a simple means to identify those students who were invited to participate. Respect for school administrators' busy schedules required that the criterion for selection of participants be as straightforward as possible.

The academic needs of gifted and talented senior secondary students, as well as the various supports necessary for their learning, go far beyond the confines of this study. The boundaries of this study exclude discussions of resolutions to many of the problems that contribute to gifted and talented learners not attaining their potentials, leaving the isolated issue of unchallenging school programs central to this inquiry. Moreover, within this singular focus, one redress to this issue is championed.

CHAPTER TWO

Literature Review

Overview

This study explores the concept of offering Advanced Placement (AP) course work to gifted and talented British Columbian senior secondary students via Web-based instruction. This chapter reviews the current literature on needs of gifted and talented learners, focusing at the senior secondary level; on competing options for internationally recognized accelerated and enriched curricula; on the current status of AP instruction in British Columbian public high schools; on advantages and limitations of Web-based instruction for providing access to AP courses to geographically diverse students; and on distributed learning instructional designs, including the specific features of Web-based models. A case is made for offering gifted and talented senior secondary students access to well-designed, Web-based AP instruction developed by the Open School and delivered through British Columbia's distance education system.

Providing Equitable Educational Opportunities for Gifted and Talented Senior Secondary Students

"The same education for all is not appropriate education for all" (Sellin & Birch, 1980, p. 16). This distinction between equal and equitable educational opportunities for learners is the foundation on which support for publicly funded specialized programs - designed, developed, and maintained to ensure that methodologies and goals suitably match diverse learners' needs - is built. In the broader sense of all categories of special needs students, this set of statements is highly recognized; however, in the narrower sense of specialized programming for gifted and talented students, statements of advocacy are sometimes met with accusations of elitism (Della-Dora, 1976; Gorden & Regan, 1979; Sellin & Birch). One often voiced perspective on educating gifted and talented students, formed on the belief that the majority of these students achieve their academic potential in spite of what educators do or do not do to support them, ignores the "range of problems" that gifted and talented young people face "as a result of their

abundant gifts: perfectionism, competitiveness, unrealistic appraisal of their gifts, rejection from peers, confusion due to mixed messages about their talents, and parental and social pressures to achieve, as well as problems with unchallenging school programs or increased expectations" (Buescher & Higham, 1990, p. 1). The specific problems that negatively influence gifted and talented learners' progress, left unaddressed, often result in "achievement scores below what might be expected from our brightest population" (Callahan, 1990; Kantrowitz & Wingert, 1992; Ness & Latessa, 1979: as cited in Parke, 1992, p. 1). When the identified needs of a population of learners are not consistently met by existing pedagogical praxis, innovations must be considered. While the boundaries of this study exclude discussions of resolutions to many of the problems that contribute to gifted and talented learners not attaining their potentials, the issue of "unchallenging school programs" is central to it.

Cox, Daniel, and Boston (1985) reported that "a large majority of gifted and talented students spend most of their day in regular classroom settings" (as cited in Parke, 1992, p.1). In British Columbia, inclusion of gifted and talented students in regular classroom settings is ensured by government policy: "A board must provide a student with special needs with an educational program in a classroom where that student is integrated with other students who do not have special needs, unless the educational needs of the student with special needs or other students indicate that the educational program for the student with special needs should be provided otherwise" (BC Ministry of Education,1995, p.1). The BC Ministry of Education's (1998b) *A Resource Guide for Teachers: Programming for Gifted Students* encourages classroom teachers to serve the needs of the gifted and talented learners in their classrooms through "individualizing programs and making the learning environment dynamic and relevant" (p.1). This policy document simultaneously acknowledges the need for specifically designed programming for gifted and talented learners, while recognizing the constraints of what classroom "practitioners can realistically do" (p.1). The array of competing responsibilities that practitioners face in fully integrated classroom settings does restrict what they realistically do for those students who are already perceived as successful students. Studies of classroom practice conducted by Archambault, Westburg, Brown,

Hallmark, Zhang, and Emmons (1993) and Westburg, Archambault, Dobyns, and Salvin (1993) show that "instruction in the regular classroom setting is generally not tailored to meet [gifted and talented students] needs" (as cited in Parke, p.1). Given the inconsistencies of provision of tailored classroom-based instruction for gifted and talented secondary students, perhaps some portion of their program needs to "be provided otherwise."

Maker's (1982) study describes gifted and talented students as differing from their classmates "on three key dimensions: (1) the pace at which they learn; (2) the depth of their understanding; and (3) the interests that they hold" (as cited in Parke, 1992, pp.1-2). Instruction designed to match each of these three key dimensions needs to be flexible enough to allow for self-pacing, to allow for expansion of both depth and breadth of curricula. The expectation that senior secondary classroom teachers can consistently prepare and monitor such complex and individualized educational materials, while simultaneously managing the needs of average, as well as other special needs students in their courses, goes beyond what "practitioners can realistically do." Lacking consistent instructional support specifically designed to provide opportunities for discovering the boundaries of their abilities and their interests, gifted and talented students can begin to question the authenticity of both their achievements and their potentials.

Buescher (1986) found that "talented adolescents simultaneously 'own' and yet question the validity and reality of they abilities they possess" (as cited in Buescher & Higham, 1990, p.1). Olszewski, Kulieke, & Willis (1987) "identified patterns of disbelief, doubt, and lack of self-esteem among older students and adults: the so-called 'impostor syndrome' described by many talented individuals" (as cited in Buescher & Higham, p.1). In Buesher and Higham's (1985) study, adolescents reported coping strategies used to overcome obstacles of doubt and disbelief; the three most often reported strategies were: (1) "accepting and using abilities to help peers to do better in classes," (2) "making friends with other students with exceptional talents," and (3) "selecting programs and classes designed for gifted/talented students" " (as cited in Buescher & Higham, p.3). While locally developed honours and/or gifted and talented (GT) programs can both supplement regular classroom activities and provide an

environment where successful coping strategies may be employed, "some colleges ignore honours or GT classes because they are of unknown quality" (Berger, 1990, p. 3). This lack of external recognition for achievement may contribute to learners' impressions that their advanced achievements are neither valued nor authentic. One strategy for reducing the effects of the adolescents' doubts about the validity of their achievements—doubts which are often fueled by concerns about "the objectivity of parents or favorite teachers" (Delisle & Galbraith, 1987; Galbraith, 1983; as cited in Buescher & Higham, p.1)—is to provide talented individuals with access to internationally recognized challenging curricula and global competition. Two programs that offer both challenging curricula and global competition are: the Advanced Placement (AP) and International Baccalaureate (IB) programs.

Competing Options. Providing gifted and talented learners with appropriately challenging curricula is central to the British Columbia Ministry of Education's mission statement, which "promotes an educational system which enables 'all learners to develop their individual potential.' For gifted and talented students this requires opportunities to develop in ways which may far exceed expected learning outcomes for their age" (BC Ministry of Education, 1995, p.1). One avenue through which the Ministry supports accelerated learning opportunities for secondary students is the recognition of AP and IB course work: "These courses count towards graduation. These internationally recognized programs extend the learning opportunities for British Columbia students" (BC Ministry of Education,1998a, pp.1-2). AP and IB programs offer gifted and talented students the opportunity to compare their achievements to the achievements of their intellectual peers around the globe, effectively providing substantive evaluation of accomplishments.

As well as recognition from the Ministry of Education, both AP and IB credits are recognized by most North American universities and colleges. University admissions personnel and scholarship committees place higher value on honours-level course credits, including AP and IB credits, in the process of selecting individual high school students for admission and as recipients of financial awards (Snee, 1998, p.1; also see Appendix G for documentation). Each university and college independently formulates

policy regarding the acceptance of specific AP and IB course grades for either full first-year credit or advanced placement within first-year course options. In British Columbia, the University of British Columbia, Simon Fraser University, the University of Victoria, and the University of Northern British Columbia each has policies that grant credit or placement, specified by both subject area and grade achieved, to AP candidates. Across Canada, 25 other universities have similar policies (The College Board, 1998a). Comparable policies exist for the recognition of IB credits (Snee,1998, p.2). The combined advantages of admissions preference, of scholarship committee recognition for AP and IB grades, and of university credit or placement provide gifted and talented senior secondary students with strong assurances that their advanced achievements are both valued and acknowledged as authentic achievements by post-secondary educational institutions.

While "any senior secondary school may offer Advanced Placement courses, schools must apply to be members of the International Baccalaureate program" (BC Ministry of Education, 1998a, p.2), IB authorization can only be obtained through a prohibitively costly procedure: "setting up an IB program typically takes about two years and costs $20,000 to $100,000 (US) for textbooks, teacher training and campus equipment" (Nguyen, 1997, p.2). "Only schools authorized by the International Baccalaureate Organisation [currently a worldwide total of 750 schools] are eligible to teach the curriculum and to register candidates for examination. Schools interested in joining the programme conduct a self-study and receive counseling through the appropriate regional office. The formal application includes an on-site inspection visit and the submission of written documentation to IBO headquarters in Switzerland" (International Baccalaureate Organisation, 1999, p. 2). Further, the IB program "is designed as a comprehensive two-year curriculum" that has as its core component required enrollment in a *Theory of Knowledge* course, as well as the expectation that all IB candidates will enroll in one IB course from each of the "six academic areas surrounding the core" (International Baccalaureate Organisation, pp. 3-4). This cross-curricular orientation of the IB program makes it less adaptable to the needs of those students who wish to only become involved in accelerated studies in the subject areas of

their prior successes. For example, a student who has excelled in previous Math or Science course work may not wish to attempt a challenging World Literature curriculum, or conversely, a student who has excelled in previous Humanities courses, may not wish to pursue challenging studies in Experimental Sciences, such as, Biology, Chemistry or Physics. Because the International Baccalaureate (IB) program is prohibitively expensive, is not accessible to all secondary schools, and is less easily integrated with existing school-based programs, the focus of the remainder of this study is on the provision of Advanced Placement (AP) course options for gifted and talented senior secondary students throughout British Columbia.

Advanced Placement (AP) Courses as an Avenue to Meet the Needs of Gifted and Talented Senior Secondary Students in British Columbia. Four distinct advantages of the using the AP program to meet the needs of gifted and talented British Columbian senior secondary students, as illustrated in the section above, are: (1) the cost-effectiveness of the program in comparison to other options; (2) The College Board's administrative policy that allows any senior secondary school to offer Advanced Placement courses; (3) established recognition for the program by the British Columbia Ministry of Education, as well as most North American universities; (4) the adaptability of AP curricula to existing school systems and practices. This adaptability of AP curricula is enhanced by the degree of commonality among existing provincial curricula and AP curricula. For example, the BC Ministry of Education has identified AP Biology, AP Chemistry, AP Computer Science-AB, AP English Literature and Composition, AP French Language, AP German Language, AP Latin, AP Physics-B, and AP Spanish Language as curricula "for which there are very similar learning outcomes" to provincial curricula (BC Ministry of Education, 1998a, pp.3-7).

The commonalities between provincial and AP curricula invite the blending of these curricula into learning programs that simultaneously foster both basic skills and advanced abilities. Since the AP program does not require students to enroll in a set number of courses or prescribed discipline areas, students may select subject areas of previous success and then build upon that success. Tuttle (1979) identifies four

principles for developing effective educational programs for gifted and talented learners; the first principle is to "design a program that builds upon the characteristics of the intellectually gifted"; "while all students need to develop 'basic skills,' gifted students can often acquire these as they develop their other, more advanced abilities" (as cited in Fox, 1986, p. 2). The inclusion of "advanced level" course work, the opportunity for blending of two curricula into one "compacted course," the ability of students to enter college-level studies prior to "the age usually prescribed," and the flexibility of "concurrent enrollment" in both high school and college level curricula, and the employment of "the College Board's advanced placement ... examination programs" are each recommended strategies for "meeting the needs of able learners through flexible pacing" of instruction (Daniel & Cox, 1988, pp. 1-2). The commonalities among AP and provincial curricula are advantageous because they allow learners the flexibility to simultaneously acquire foundational learning outcomes while pursuing challenges that go beyond core curriculum to earn successful learners either advancement standing in or credit for first-year university courses.

Current British Columbian Public High School Participation in the AP Program. In May of 1998, 4559 AP exams were written by students in British Columbia (The College Board,1998a). In 1998, almost half of British Columbia's public secondary schools enrolled some students who participated in the Advanced Placement program. Of the 255 public secondary schools in BC who reported Grade 11 and 12 enrollment in 1998, 107 (or 42 percent) are listed as schools with AP candidates [students who have written AP exams] in 1998; of those 255 schools, 148 (or 58 percent) did not have AP candidates in 1998 (British Columbia Data and Transcripts Branch,1998; The College Board,1998a). One significant difference between those schools who had AP candidates and those schools who did not have AP candidates was the total school enrollment. Average enrollment in schools with 1998 AP candidates is 531.8 students, while average enrollment in schools without 1998 AP candidates 273.1. The percentage of BC public secondary schools that do have AP candidates illustrates the strong value that schools

and students have for the AP program. The concentration of AP candidates in schools with larger enrollments suggests that an inequity is occurring.

The inequities of opportunity for gifted and talented senior secondary students enrolled in the British Columbian public school system currently go beyond the presence or absence of AP candidates. Informal interviews with administrators of schools involved in this study, conducted to contextualize study findings within current school practices, revealed that school-based preparation provided for students who wish to write AP exams varies widely from school to school in British Columbia. Some students who have not had access to any classroom-based preparation choose to challenge AP exams. At one site in this study where no classroom-based support was available, each of the participants was registered to write one or more AP exams. At a second site, three AP and provincial curricula were offered as blended courses. Students enrolled in these blended courses received the equivalent of one-half of one block of AP instruction in the semester in which AP exams were written. At a third site, students in the AP program typically had taken honours sections of their subject area(s) from Grade 8 through Grade 11. At the Grade 12 level, AP courses were offered as separate courses which were paired with provincial courses in the timetable; therefore, students received at total of 12 hours per week of instruction in their AP subject area(s) during the semester in which AP exams were written. At a fourth site, curricula were blended with provincial curricula within regular course blocks which included both AP and non-AP students. Teachers were allowed one week of time-in-lieu to compensate for planning and teaching these extra curricula and for meeting with groups of AP students outside class time. At a fifth site, one AP course, European History, was offered as a completely separate course with no connection to provincial curricula. These variations make it impossible to describe "typical" experiences of British Columbian AP candidates because there is no classroom-based instructional standard for British Columbian AP candidates.

Web-Based Distributed Learning as a Means to Provide AP Instruction for Gifted and Talented Students in British Columbian Public High Schools. In the schools in this study where classroom-based AP courses were not available, school administrators reported fiscal restraints, limited numbers of prospective AP students, and the lack of qualified teachers to teach AP programs as reasons. Of these three reasons, limited prospective enrollment was most common. Schools with small total enrollments simply do not have the resources to offer their gifted and talented students AP courses. Bringing together prospective AP students in a virtual learning community could resolve this problem. "Perhaps more than any other distance media, the Internet and the Web overcome the barriers of time and space in teaching and learning" (Kerka, 1996, p.1). Providing gifted and talented students with an appropriate electronic learning option is a pragmatic approach to mediating existing inequities of opportunity and instructional support for AP students within the British Columbian public educational system.

In Canada, as well as around the world, interest is growing in the area of distributed learning; "curriculum reforms, reductions in ... fiscal revenues, selected areas of teacher shortage, and increased desire to broaden educational opportunities for students regardless of their geographic location have spawned great interest in distance education as a means to deliver instruction" (Barker & Dickson, 1996, p. 19). In British Columbia, the Open School is the primary provider of K-12 programs for distance learning. In the 1997-1998 school year "total secondary enrollment" in Open School programs delivered through the Distance Education branch of the Ministry of Education "was 44,260 courses" (T. Winkelmans, email message, March 1,1999). "Of these, 14,750 courses were taken by students already attending school" (T. Winkelmans, email message, March 1,1999). Of the 48 Grade 11 and 12 courses developed by the Open School, 14 are now available in a Web-based instructional format and are delivered to learners across the province through nine Distance Education Centers (T. Winkelmans, personal communication, June 3, 1999). Given that the infrastructure, the Web-based instructional design expertise, and the delivery protocol for distributed learning are already in place in British Columbia, and given that classroom-based AP courses are not available in more than half of the schools that enroll senior secondary students in this

province, it seems both practical and equitable to extend current course offerings through the blending of AP curricula with existing Web-based provincial curricula, in order to serve those students who wish to challenge themselves, but currently have no opportunity to receive AP instruction.

Advantages of Web-Based Distributed Learning

Emerging information technologies employed in the field of distance education are paradoxically supporting and transforming traditional distance education practices. Romiszowski (1993) describes the four generations of development in distance education as: (1) "print-based correspondence," (2) "reliance on open broadcast by either radio or television, supported by correspondence instruction and print materials," (3) "teleconferencing systems ... that supported the telephone audio conference with visual and textual material," and (4) "the integrated use of remote study materials supported by computer-based multimedia teleconferencing" (pp.1-2). Each development has improved the efficiency of communication media and expanded the opportunities for exchange of information between students and instructors. Each of these generations of development has both subsumed its predecessors and transformed the experience of distance learners. At the core of each generation of development is an innovation designed to address a further dimension of flexible effective communication. At the core of all distributed learning theory and practice, the issue of flexible effective communication is crucial. The capacity of the World Wide Web to integrate "all of the capabilities of existing distance learning media" underpins "the functionality of a modern on-line learning program" (Patel & Volk, 1997, p.240). The integration of synchronous and asynchronous communications, of timely audio, visual, and textual information exchange, of cross-platform compatibility, and of access to current information and resources that far surpass what can be made available through any single educational institution — all combined into a centralized 'location' — make Web-based learning environments flexible and effective, capable of facilitating vastly increased educational opportunities for students regardless of their geographic location (Barker & Dickson, 1996; Kerka, 1996; Patel & Volk, 1997).

Limitations of Web-Based Distributed Learning Programs

The augmentation of educational opportunities facilitated through the use of emerging technologies is bracketed by accompanying challenges. While information technologies are being developed at a seemingly exponential pace, neither the infrastructure needed to support them, nor equity of access to state-of-the-art hardware and software has progressed at a comparable rate. Reliable "access to the Internet is still a problem for some rural areas and people with disabilities"; furthermore, existing infrastructures are frequently only capable of supporting "limited bandwidths (the capacity of communications links)" and "slow modems hamper the delivery of sound, video, and graphics" (Kerka, 1996, p.2). "Some students may not have the luxury of a home computer," and even those who do may have to share computer time "with family members, leaving limited time for the electronic student to do work"(Clarke, 1998, p.84). Time constraints are tightened when students are required to learn new technological skills simultaneously with challenging curricular content. In a Web-based learning environment academic success "depends upon technical skills in computer operation and Internet navigation, as well as the ability to cope with technical difficulties" (Kerka, p.2). Information overload is a third complicating factor with which students must deal by either acquiring new or honing current information management skills and metacognitive strategies (Dimaraki, Black, & Brown, 1998; Kerka, 1996). Responsibilities for both structuring and acquiring academic content are "much more diffused" in a Web-based learning environment "than with traditional teacher-led instruction"; therefore, learners must be able to adapt to these ambiguities in order to fully benefit from virtual learning opportunities (Wilson, p.14). In combination with this series of formidable challenges, students may have to overcome a sense of social isolation and may have to struggle with sustaining effective levels of self-discipline, self-motivation, self-efficacy (Dimaraki, Black, & Brown, 1998; Kerka, 1996; Wilson, 1999). While the limitations and the challenges inherent in a virtual learning environment must be neither discarded nor discounted, much can be done to mediate their effects through cost-efficient infrastructure initiatives and well-crafted instructional design and support.

Infrastructure and Delivery Initiatives Currently in Progress in British Columbia

While in the past "high cost and poor access to technology have been barriers for B.C. schools," the ongoing implementation of The Provincial Learning Network (PLNet), slated for completion in the autumn of 2000, will provide "support for instruction, learning and advanced forms of distance education" in all British Columbian public schools (Coombs, Province of British Columbia, Ministry of Education, Skills and Training, 1998a). PLNet service will be characterized by "high-bandwidth connection," and "24-hours-a-day, 7 days-a-week help desk support" (Coombs). Additionally, PLNet "engineers will work with school districts, colleges and other organizations to find the best way to identify requirements, and to select and configure the appropriate network solutions for each institution" (Coombs). PLNet has currently been mandated to support senior secondary courses through coordinated activities with the Open School and distance learning centers throughout the province (Coombs). Combined, these initiatives efficaciously address the most critical learner access issues.

Technical Support for Learners in a Virtual Learning Environment

Once PLNet is fully functional, access to network and Internet support will be readily available in a timely efficient manner to electronic learners. However, courseware-specific support is still crucial for both learners and instructors during the delivery stage of Web-based distributed learning programs (Weins & Gunter, 1998). Because in an electronic learning environment academic success hinges on technical coping strategies, the combined stresses can intimidate learners and inhibit learning (Kerka, 1996; Clarke, 1998). In order to ensure that anxiety levels do not overwhelm learners, multiple avenues to access technical support (telephone and web-based) need to be available.

Designing Appropriate Instruction for an AP Online Program

Two requisite sets of criteria: the specific needs of gifted and talented learners and the needs of distance learners working in virtual classrooms, require examination, then fusion into a cohesive delivery program. The identified learner characteristics of gifted and talented students include: (1) a need for accelerated, yet self-paced instruction; (2) breadth of content from which topics of special interest can be selected; and (3) provision for in-depth examination of selected topics (Maker, 1982, as cited in Parke, 1992). These characteristics indicate the need for provision of a relatively high degree of learner control. Research into the broad area of learner control in electronic learning environments has, to date, produced somewhat ambiguous results; however, the more distinct findings correlate well with the identified learner characteristics of gifted and talented students. Borsook (1991) found that "learners who are generally high achievers or who are knowledgeable about an area of study can benefit from a high degree of learner control" (as cited in Schwier, 1992, p. 9). Okey and Jones (1990) qualify this finding with their assertion that "learners provided with choiceful behavior in a computer-based learning environment need knowledge about what they know and what is required in order to successfully regulate their own learning" (p. 5). Arnone and Grabowski, (1991) argue that "learner control with advisement seems to be superior to unstructured learner control for enhancing achievement and curiosity, promoting time-on-task, and stimulating self-challenge" (as cited in Schwier, p. 9). Litchfield (1993) in her meta-analysis of learner control research to date argues that "advisement was beneficial to students in effectiveness, appeal, and efficiency"; that the programs which feature "adaptive advisement" are most effective (p.6). Adaptive advisement provides a means to access expertise, a means to support a relatively high degree of learner control, while preventing "overwhelming bewilderment, incomprehension and frustration, or passive browsing" (Dimaraki, Black & Brown, 1998, p. 181). Access to expertise needs to include both access to a teacher and access to "well-designed instructional materials" which can "spare learners headaches and wasted time" (Wilson, 1999, p. 15).

Finding the appropriate balance between structure and choice is the pivotal challenge of instructional design for virtual learning environments. "Unless the learning

experience is structured in a way that communicates to the students the purposes, questions and modes of thinking that render 'the common record meaningful,' their experience" of Web-based instruction may become overwhelming and frustrating; conversely, reducing Web-based instruction to "self-contained 'lessons,' similar to textbooks" would "fail to capitalize on the pedagogical potential of the new medium" (Dimaraki, Black & Brown, 1998, p. 181). Determining the appropriate balance between structure and choice which best accentuates the pedagogical potential of Web-based instruction designed for gifted and talented learners is more a matter of ongoing negotiation than temporal decision-making. Initially, instructional designers must establish a reliable communication system which supports five functions: "to encourage, to correct errors, to signal difficulties on the part of the learner, to inform those who prepare instructional materials, and to allow learner and teacher to take off in directions which had not been forecast" (Perraton, 1987, p.10). Secondly, program managers need to ensure that students are well-informed of the learning goals and objectives they will be expected to achieve, the methods and the instruments that will be used to assess their achievements, the breadth and depth of content they will need to master in order to be successful, and the scope of activities and learning interactions in which they will be expected to participate (Wilson, 1999, p.12). Thirdly, designers and teachers need to "participate along with their clients in the practitioner culture," and to facilitate the evolution of the instructional design as students "continue the design process as they determine how and where to make place for resources in their lives" (Wilson, pp.12-15). Finally, students need to "assume more responsibility for their own actions and engage in designing/self-teaching activities themselves" (Wilson, p.12). While this systems approach to instructional design appears in a linear fashion, it is not implemented in a linear manner; it is constantly revisited and renegotiated by designers, teachers and learners (Schiffman, 1995).

Utilizing Web-based Tools to Optimize the Virtual Learning Environment. In a Web-based environment, instructional designers can utilize a variety of tools to support learning, including: course path tools, bulletin boards, electronic mail, real-time chat / conferencing tools, student presentation areas, and grading tools (Dabbagh & Schmitt, 1998, p. 107; see also Corrent-Agostinho, Hedberg & Lafoe, 1998; Gillani, 1998; Gray, 1998). Course path tools provide learners with essential information about the course outline and objectives, the scope and sequence of learning activities, assignment schedules and assessment instruments, as well as providing "organization of course content into both a linear and hierarchical relationship" (Dabbagh & Schmitt, p. 108). Bulletin boards "enable course discussions, announcements, and student participation" (Dabbagh & Schmitt, p. 108) and enhance achievement through "provision of collaborative elements" in the course design (Gray, p. 187). Email messages "allow one-to-one message transfer" both between individual students and the instructor and among students, facilitating privacy and clarity in communication (Dabbagh & Schmitt, p. 108); perhaps because email is the most familiar tool to most students, it tends to be "the medium most frequently used" for file exchange among students (Corrent-Agostinho, et al., p. 175). Furthermore, email enables instructors to "become familiar with the writing styles and abilities of individual students" (Gray, p. 188). Real-time chat and conferencing tools provide forums for synchronous class discussions (Corrent-Agostinho, et al.), on- and off-task conversations among groups of students (Dabbagh & Schmitt; Clarke, 1998). Student presentation areas within a bulletin board structure "enable the designer to give authoring privileges to students and to allocate links for student-generated Web pages" (Dabbagh & Schmitt, p. 108); these areas also provide space for students to post preliminary work for formative evaluation by instructors and critique from members of the cohort and/or outside experts who have been commissioned to participate in course activities (Corrent-Agostinho, et al.; Dabbagh & Schmitt; Gillani; Gray). Grading tools provide instructors with an efficient means to inform students of their progress and provide students with an efficient means to track their own progress (Dabbagh & Schmitt, p. 108). This complex and integrated set of tools, at first glance, may seem prohibitively demanding for courseware designers or

prohibitively expensive to program managers; however, recent courseware releases provide cost-efficient solutions to this broad range of web-based activities.

For example, WebBoard 3.0 is an affordable browser-based courseware product that integrates email; public, full-group, limited-member and private conferencing and chat capabilities; a structured information hierarchy that enables efficient information management; support for the use of file attachments (graphic and text), spreadsheet applications, foreign languages, and Internet links; the technical support of an online "trouble-shooting, diagnostics and Frequently Asked Questions" feature; as well as both cookie (saved password) and basic (user login and password) authentication features for security purposes (Peck & York, 1998, pp. 3-15). WebBoard is currently used by the University of Victoria's Continuing Education, Education, Law, English and Psychology units; therefore, expertise and support are locally accessible (B. Byrne, personal communication, June 1, 1999). WebBoard, or a comparable courseware product, could be used to provide instructional designers with each of the Web-Based tools that the research shows effectively support students and instructors in a virtual learning environment.

Implementing Appropriate Instruction for an AP Online Program

For both instructors and students, emigration from the classroom to an electronic learning environment is a journey through uncertainties, marked by few theoretical signposts. "Models of web-based pedagogy that would address the challenges and pitfalls of learning the information-rich environment cannot be readily derived from standard K-12 instructional practice" or learning experience (Dimaraki, Black & Brown, 1998, p. 181). The theoretical base of distance learning is more closely linked to virtual learning than is classroom-based pedagogy because the underlying issues of learning and instruction in the field of distance learning overlap those encountered in virtual environments. Self-motivation; self-pacing; clarity of communication; and coping strategies for overcoming the sense of social, as well as academic, isolation are each skills that distance learners have always needed to acquire and distance instructors have always needed to foster. Responsibility for learning in all distributed learning

environments resides much more with the learner than in classroom-based instructional settings; however, there are support strategies in distance learning research which can be adapted to virtual classrooms. "Retaining and motivating students hinges on rapid feedback" (Thomas, Carswell, Price & Petre, 1998, p. 153). "High motivation levels lead to subjects spending more time with the computer program and subsequently contribute to higher learning outcomes" (Small & Grabowski, 1992, as cited in Ross and Schulz, 1999, p. 20). Support for students' continuing motivation begins with acknowledging and priorizing "*timely* help" to ensure contact with the instructor can occur "at the crucial moment" in order to prevent "learning delays and frustration" (Thomas, et al., p. 158). Web-based tools, such as, email and bulletin board conferencing can be used to support learners' and instructors' efforts to keep communication effective and efficient; however, some learning crises are better addressed through personal "simultaneous two-way communication" (Perraton, 1987, p. 11). "Communicating with students via the telephone helps foster a supportive relationship with students" (Gray, 1998, p. 187).

Strong student-instructor relationships are crucial in mediating the sense of both academic and social isolation which can hinder distance learners. "There remains the need for interpersonal contact and guidance to ensure that all students attain their learning potential" (Ross & Schulz, p. 21). Boverie, Nagel, McGee, & Garcia's (1998) study suggests that "social presence (how well the student relates to the instructor)" is the most strongly related variable to student satisfaction with distance learning programs (p.3). The creation and maintenance of a positive, supportive social environment may be the most important feature in both the design and the delivery of Web-based instruction.

Tailoring and Maintaining a Comfortable, Effective Virtual Learning Community for Gifted and Talented Students

The specific learner characteristics of gifted and talent learners, in some ways, make the tailoring of a comfortable, effective virtual learning community to meet their needs a more streamlined process. Accelerated, yet self-paced instruction; breadth of content from which topics of special interest can be selected; and provision for in-depth

examination of selected topics (Maker, 1982, as cited in Parke, 1992) can each be accommodated in virtual learning communities where "the variable of intrinsic goal orientation (degree to which participation in a task is for reasons of challenge, curiosity and mastery) has been found to be significantly correlated with learner satisfaction (Boverie, Nagel, McGee, & Garcia, 1998, p. 4). Resource management skills, such as, "keeping evidence organized, searching databases, locating information of interest within a text, taking notes on research," as well as "taking observation notes on an artifact, categorizing and dating" information (Dimaraki, Black, and Brown, 1998, p. 184), are each challenging, highly valuable skills to acquire and to improve. An immediate purpose for honing these skills serves the wide-ranging interests and high levels of curiosity that mark gifted and talented learners. Learner satisfaction with virtual learning environments has been shown to be statistically correlated with the belief that participation has led to increased resource management skills (Boverie, et al., p. 4). These commonalities between gifted and talented students' learner characteristics and those characteristics which are strongly correlated with learner satisfaction in virtual learning environments suggest that gifted and talented learners are highly likely to be able to feel comfortable, overcome other obstacles, and adapt well.

One probable obstacle that needs to be addressed in a virtual learning community is the tendency of self-directed, self-motivated students to be overly independent. Interpersonal contact, collaboration, and social interaction are basic features within any successful learning community, virtual or physical; however, the need to mediate factors of academic and social isolation makes these features critical in a virtual learning community (Barker & Dickson, 1996; Boverie, Nagel, McGee, & Garcia, 1998; Dimaraki, Black, and Brown, 1998; Gillani, 1998; Gray, 1998; Kerka, 1996; Patel & Volk, 1997; Ross & Schulz, 1999). Queries into electronic learning communities have shown that learner responses to online instruction vary: "some participants feel more intimidated about posting their thoughts to unseen classmates; others find the relative anonymity of the medium to be liberating" (Clarke, 1998, p. 81). Encouraging online learners to "work in large groups, small groups, and pairs, as well as to participate in 'off-task talk' are strategies that have been found to mediate learner concerns about a lack of

social interaction in an electronic learning environment" (Clarke, p. 84). Because learners are capable of accessing and choosing a wide variety of learning resources to support their own learning and because learners are able to distribute these resources among members of their cohort, "responsibility is much more diffused" in a virtual learning environment (Wilson, 1999, p. 14). "Under such conditions, questions of motivation become at least as important as questions of technical-skill building or knowledge communication"; therefore, understanding "cultural and social factors, to supplement traditional psychological and information-processing factors" is essential to instructors who work in a virtual learning environment (Wilson p. 14). In *Building Learning Communities with Technology* (1997), Eugene Kowch and Richard Schwier discuss ways in which academic and social interactivity can be facilitated by "moral connections" made within virtual learning communities through group-defined negotiations that strive toward creating a cyber place where "'I' thinks about "We,'" where "learners and teachers ... strive to engage in the learning process (together) for mutual benefit and not through power relationships" (p.3). Their description of how this space needs to be created puts language at the center and places emphasis on the need for the space's form to be "aesthetically pleasing" (p.4). They suggest virtual learning communities need to be constructed on "shared purpose," "interconnections that result in a particular harmony (but not unity)," "a level of intimacy appropriate for any negotiated relationship," "shared commitment," and "immediate engagement" (pp. 7-9).

The skills acquired through participation in a thoughtfully and morally negotiated virtual learning community serve its members both within and beyond its boundaries. "Economic success in information age society appears to demand new skills and new ways of making meaning; thus, there is a need to learn the new technologies, ... to learn through the new technologies, ... and to learn about new technologies and the ways they permeate life, just as we need to learn about language and its role in social life" (Bruce, 1998, p. 222). The acquisition of information and time management skills, collaborative learning and working skills, as well as the development of a richer understanding of the implications of living and working in information age society may accompany the academic and social challenges students pursue in virtual learning communities.

Summary

Currently, inequities in the provision of specifically designed instruction for gifted and talented senior secondary students who wish to pursue challenging curricula exist among schools in British Columbia. Ministry of Education, Skills and Training initiatives to support the extension of learning opportunities for this group of learners include recognition of Advanced Placement credits; provision of expanded opportunities through Open School course development, and course delivery mechanisms based in provincial distance learning centers, which are being made more accessible and effective by province-wide infrastructure and network improvements. The next seemingly logical step in this process is to design and deliver well-crafted, well-supported, publicly funded online Advanced Placement courses to gifted and talented British Columbian senior secondary students throughout the province. However, before this final step is taken, prospective "students need to be asked to express their views" (Ross & Shulz, 1999, p. 20). The purpose of this study is to investigate student attitudes toward the concept of AP online course work and to discover student beliefs about their needs in a virtual learning environment.

CHAPTER 3

Methodology

Philosophical Assumption and Theoretical Framework

This research began with an awareness of a specific set of details that led a series of particular observations about the context in which those details were embedded. The process of searching for generalizations through which to organize the meanings of those details led to the formation of a methodological research paradigm as the guiding assumption of this inquiry (Creswell, 1998, pp.74-75). Data collection involved multiple cases and used multiple data sources. Data analysis included descriptive, thematic, and statistical synthesis which led to a narrative report, augmented with tables and figures, concluding with a set of assertions (Creswell, pp. 148-149). Broadly, then, this study is best described as a case study, which utilizes statistical data as one of its artifacts.

Dual Methodologies

Participants were recruited from eight schools in six school districts from four regions of British Columbia. One hundred and three Grades 11 and 12 students who had achieved an A standing in a provincially examinable course area completed the quantitative questionnaires. Twelve volunteers, who had completed the quantitative questionnaires, also participated in focus group sessions. Three groups of four participants were involved in focus groups.

Since two distinct kinds of data were needed in this study, both quantitative and qualitative methodologies were used. The quantitative section of the study was designed as an *ex post facto*, co-relational study (Tuckman, 1994). A pretest-treatment-posttest feature was incorporated to measure benchmark awareness levels and to mediate the possible influence of this variable on the outcomes of the study. The qualitative section of the study was conducted through a series of focus group sessions where "open-ended, evolving" questions guided discussion (Creswell, p. 99). Analysis of the collected data, in terms of the broad context of current practice in British Columbia, required adding a

third layer of statistical inquiry into enrollment data and AP participation data via exploration of Ministry of Education records and AP Canada reports. Information collected from government policy documents added a further dimension to this portion of the case study. Aggregation and analysis of these three layers of data into predictions about the feasibility of offering a successful AP online program, designed to meet the expectations and the needs of prospective students, conclude this study.

A pilot of this study, which involved ten participants from one school not included in the full study, was conducted to test the reliability of the quantitative questionnaire and the effectiveness of the qualitative questionnaire. Revisions to the questionnaires were made to address the problems which emerged in the pilot. The revised questionnaires were submitted to the university's Human Research Ethics Committee for approval (See Appendix A).

Research Design: Quantitative Section

A combination of direct and indirect questions was used in the construction of the questionnaires. "The difference between direct and indirect questions lies in how obviously the question solicits a specific piece of information" (Tuckman, 1994, p. 217). Typically, direct questions elicit "Yes," or "No," answers; indirect questions allow for a range from strongly held agreement to strongly held disagreement.

The quantitative questionnaires were divided into two sections: one pre-presentation section and one post-presentation section (See Appendix B). The pre-presentation quantitative data were collected through sets of scaled-response questions which asked 1) direct questions about what participants knew about the AP program and its availability in their high schools; 2) indirect questions about their current attitudes toward AP course benefits and their current beliefs regarding the recognition of AP credits by the Ministry of Education and BC, as well as Canadian, colleges and universities. After having completed these first two questionnaires, participants were asked to spend approximately one-half hour navigating through information about the AP program on a web site designed for that purpose. The presentation medium was selected to provide participants with information on an as-needed basis. The web site

included: a statement from George Ewonus, head of AP Canada, on the history of the AP program in Canada and the benefits he perceives the AP program offers to students; AP advantages as reported by students who have participated in the program; information about the Ministry of Education's crediting of the courses; information about BC and Canadian college and university credit policies. The site also included links to the College Board's web site, the AP Canada web site, the Ministry of Education policy document on AP courses, the OS web site, and the APEX web site (a commercial site which currently offers Web-based AP courses).

The post-presentation quantitative data were collected through indirect questions that elicited responses to student comfort levels with the concept of taking AP course work, student comfort levels with the concept of taking AP course work in an Internet setting, student interest levels in specific courses, students' economic considerations regarding the cost of taking course work in an Internet setting, student beliefs about access to technology through their schools and in their homes, and student perceptions of the value specific technological features in an Internet learning environment.

Pre-Presentation Questionnaires. The first two pages of the questionnaire were completed before participants attended the presentation on Advanced Placement course work. Responses to these questions provided benchmarks for participants' awareness of and experience with the AP program. The purpose for collecting this data was to determine whether the success of an AP online program would, in part, depend upon advertising to raise awareness.

Operational Definitions. Four operational definitions were used for this design: 1) criterion-group: 103 gifted and talented participants who were representative of regional, gender, and socioeconomic student groups in British Columbia. Gifted and talented students were defined as Grades 11 and 12 students who had achieved A standing in one or more provincially examinable course areas. Since one questionnaire was incomplete, the data sample described has been reduced to 102 participants;

2) prior knowledge of AP courses: awareness of AP courses being offered at the participants' schools, awareness of Ministry and university AP credit policies, awareness of the challenging content of AP course work;
3) experience with AP courses: having already enrolled in and/or taken an examination in an AP course; and
4) attitude toward taking AP courses: level of interest expressed in doing so.

The first set of questionnaires, *Background Information* and *Awareness About AP Courses*, were designed to provide a description of participants' prior (1) knowledge of and (2) experience with Advanced Placement (AP) course work, (3) pre-presentation levels of understanding about Ministry and university polices regarding AP credits, and (4) beliefs about the value of taking AP courses. In Part A, participant responses were be limited to (Yes) or (No) to determine awareness of and experience with AP course work. In Part B, participant responses were expanded to include: (Strongly Agree), (Agree), (Disagree), (Strongly Disagree), and (Don't Know).

Responses to Questionnaire Part I: A. Background Information were recorded in Appendix E: Data Roster A, then scaled and charted on a scatter diagram to illustrate the ranges of awareness of and experience with AP course work and examinations among participants.

Responses to Questionnaire Part I: B. Awareness About AP Courses were recorded in Appendix E: Data Roster B, where calculations of the mean and standard deviation of scores are shown, as well as the correlation between participants' knowledge of Ministry of Education, university and college policies regarding AP credits and participants' value for AP course work.

The Presentation. The purpose of the presentation was to mediate the possible effects of variable prior knowledge of AP courses and institutional policies through providing participants with access to information regarding the AP program.

Post-presentation Questionnaires. Post-presentation questionnaires were designed to measure participant attitudes toward the concept of an AP Online program. The third

page of the questionnaire, *Comfort Levels*, was designed to measure possible correlation between participants' intellectual confidence (X_1) attitude toward the concept of taking AP course(s) in general (Y); technical competence (X_2), and taking AP courses online (Y_1). This part of the research design was diagrammed:

C_1	X_1	Y
C_1	X_2	Y_1

Figure 1

Comfort Levels
C_1 = criterion group, X_1 = level of intellectual confidence, X_2 = attitude toward AP, Y = technical confidence, Y_1 = attitude toward AP online

In this section of the questionnaire, participant responses included: (Strongly Agree), (Agree), (Disagree), and (Strongly Disagree). The scale of responses was designed to measure possible correlation between participant self-efficacy levels: academically and technically (both independent variables) and participant attitudes (the dependent variables) toward taking AP courses in general (Y) and AP courses online specifically (Y_1). The purpose for making this comparison was to determine which participants' beliefs influenced attitudes towards taking AP courses online: about personal intellectual ability, about personal motivation, and about personal technical competence.

Responses to Questionnaire Part I: C: Post Presentation Questions: 1. Comfort Levels, Questions 1 to 5 were recorded in Appendix E: Data Roster C (Self-Efficacy / AP Interest), where calculations of the mean and standard deviation of scores are shown, as well as the correlation between participants' levels of self-efficacy and participants' interest in AP course work.

Responses to Questionnaire Part I: C: Post Presentation Questions: 1. Comfort Levels, Questions 6 and 7 were recorded in Appendix E: Data Roster C.1 (Technical Knowledge & Confidence /AP Online Interest) where calculations of the mean and standard deviation of scores are shown, as well as the correlation between participants' level of technological skill and confidence and participants' interest in online AP course work. Since 27 of the 102 participants responded to either Question 6 or Question 7, but not both, the analysis of aggregate data skewed results. For example, a response which

stated strong confidence in existing technical skills and did not include a measure of technical confidence, when aggregated, would tend to suggest a weakness in both technological skill and confidence levels for that participant. Therefore, the analysis has been split into separate correlations between reported technological skill and online AP interest and reported technological confidence and online AP interest.

All AP course offerings (as of October, 1998) were listed on the fourth page of the questionnaire. Between October, 1998 and the time the study was conducted, the College Board added an Environmental Science course to its offerings, and that course was listed at one of the Web sites participants viewed in the study. Those participants who expressed interest in the Environmental Science course were asked to add it to the list of courses. Participants were able to access course descriptions from the College Board AP site and the AP Canada site in order to make timely, informed choices. However, many participants found it difficult to distinguish between Calculus AB and Calculus BC, Computer Science A and Computer Science AB, and Physics C-Mechanics and Physics C-E & M, given the course descriptions posted on AP Web sites. As a result of this lack of clarity, I asked participants to consider each of these pairs of courses as one selection; therefore, the scores for these subject pairs are combined in the results.

Study participants were instructed to select and priorize their top three choices. This part of the study was designed to limit course preference responses in order to provide a clear indication of which courses elicited the strongest interest, and therefore, which courses would most likely be successfully offered.

Responses to Questionnaire Part I: D: Courses That Interest You were recorded in Appendix E: Data Roster D (Course Preferences) where interest in courses has been scaled as 3 points for a first choice, 2 points for a second choice, and 1 point for a third choice. The total number of times a given course has been selected and the point total for each course are recorded at the base of this roster.

The fifth page of the questionnaire, *Economic Considerations,* was designed to measure possible correlation between participants' beliefs about their ability to pay for

online Advanced Placement course work (X_3) and attitude toward the concept of taking AP courses online (Y_1). This section of the research design was diagrammed:

C_1	X_3	Y_1

Figure 2

Economic Considerations
C_1 = criterion group, X_3 = level of economic confidence, Y_1 = attitude toward AP online

In this section of the study, participant responses included: (Strongly Agree), (Agree), (Disagree), and (Strongly Disagree). This scale of response was designed to measure possible correlation between participant socioeconomic status and participant attitudes toward taking AP courses online. The purpose of this section was to determine the percentages of students who would need financial assistance in order to participate in AP online course work, as well as the level of assistance students identify as needed. Question 4, on this page, was a distracter and responses to it were not included in the data analysis.

Responses to Questionnaire Part I: E: Post Presentation Questions: Economic Considerations, Questions 1-3 and 5-6 were recorded in Appendix E: Data Roster E: (Economic Confidence /AP Online Interest) where the number of participants who expressed interest in online AP course work, but also expressed significant doubt about their ability to pay for that course work are recorded, and calculations of the mean and standard deviation of scores are shown, as well as the correlation between participants' level of economic confidence and participants' interest in online AP course work.

The fourth section of the post-presentation questionnaire, *Access to Technology*, was designed to measure possible correlation between participants' perceptions of access to technology (X_4), and attitude toward the concept of taking AP courses online (Y_1). Further, this set of data was designed to measure possible correlation between participants' beliefs about need for access to technology (X_5), and attitude toward the concept of taking AP courses online (Y_1). One operational definition was added in this section: "access to technology" was defined: having uninterrupted access to a computer connected to the Internet for at least 1 hour, 3 days a week.

This section of the research design was diagrammed:

C_1	X_4	Y_1
C_1	X_5	Y_1

Figure 3

Access to Technology
C_1 = criterion group, X_4 = perceived access, X_5 = perceived need for access, Y_1 = attitude toward AP online

In this section of the study, participant responses included: (Strongly Agree), (Agree), (Disagree), and (Strongly Disagree). This scale of response was designed to measure possible correlation between participant access to technology in the home and at school and participant attitudes toward taking AP courses online. The purpose of this section was twofold: 1) to determine participants' actual access to technology and 2) to determine whether beliefs about access to technology influenced student attitudes toward taking AP course work online.

Responses to Questionnaire Part I: F: Post Presentation Questions: Access to Technology, Questions 1-2 and 3-4 were recorded in Appendix E: Data Roster F (Technical Access /AP Online Interest) where calculations of the mean and standard deviation of scores are shown, as well as the correlations between participants' beliefs about their access to technology and participants' interest in online AP course work; and participants' beliefs about the levels of technology to which they would need access in order to successfully complete an AP online course and participants' interest in online AP course work are shown.

The final section of the quantitative part of this study, *Technical Support in an Internet Learning Environment,* asked participants to rate specific courseware features. In this section of the study, participant responses included: (Necessary), (Helpful), and (Ideal). Three operational definitions were used in this part of the questionnaire: 1) necessary - needed to make the program worthwhile, 2) helpful - would make the program more attractive, and 3) ideal - would make the program very attractive. The scale of response was designed to measure student attitudes about the value of specific features in an Internet learning environment. The purpose of this section was to

determine which electronic and human supports participants perceived as necessary to make the program worthwhile, helpful to make the program more attractive, and optimum to make the program very attractive.

Responses to Questionnaire Part I: G: Post Presentation Questions: Technological Support in an Internet Learning Environment were recorded in Appendix E: Data Roster G (Technical Support Features) where the number of times each feature was rated, the rating it was given, and the percentage of participants who gave each feature each rating are recorded.

Finally, comparisons among participant ratings of interest in AP course work, interest in Online AP course work, and AP courses offered at participants' schools were made. This section was included to compare: 1) correlation between general interest in AP course work and Online AP course work, and 2) correlation between interest in Online AP course work and the number of classroom-based courses which participants' schools offered during the study. These comparisons were used to contextualize information provided by participants. The part of the design was diagrammed:

C_1	X_6	Y
C_1	X_6	Y_1

Figure 4

Access to Classroom-based Instruction
C_1 = criterion group, X_6 = access to classroom-based instruction, Y= attitude toward AP
Y_1 = attitude toward AP online

Responses to Questionnaire Part I: C: Questions 4 & 5 were compared to responses to Questions 8 & 9. Responses to Questionnaire Part I: C: Questions 8 & 9 were compared responses to the number of classroom-based AP courses available in participants' schools (as reported by school administrators). These sets of data were recorded in Appendix E: Data Roster for C.2 AP Online Interest / AP In-School Course Offerings) where calculations of the mean and standard deviation of scores are shown, as well as the correlations between participants' interest in AP course work in general and

participants' interest in online AP course work; and participants' access to in-school AP courses and participants' interest in online AP course work are shown.

Research Design: Qualitative Section

The qualitative, guided questions were directed to three focus groups of four participants who had responded to the pre-presentation questions, attended the presentation, expressed interest in the concept of taking AP course(s) in an Internet setting, then volunteered to participate in a one-hour focus group session. Those participants who did not participate in organized focus group sessions were invited to contribute written comments to any or all of the focus group questions. These questions were designed to reveal a deeper understanding of participants' rationales for interest in and concerns about taking AP courses, perceived advantages of and concerns about taking AP courses in an Internet setting, as well as perceptions of needed, helpful and ideal features in an Internet learning environment.

Interview Questions. The central question of this case study is how students would respond to the option of taking Advanced Placement course work in an electronic learning environment, if this option were available to them. This question is "open-ended" and "evolving," and it restates the "purpose of the study" (Creswell, 1997, p. 99). However, it is somewhat "directional," in that it focuses on achieving the purpose of determining the feasibility of such a program's success. (Creswell, p. 99). Each of the "issue subquestions" is designed to address a "perplexity to be resolved" (Creswell, p. 99). Student perceptions about the benefits of and the concerns raised by the concept of the AP program, in general, and taking AP course work online, in particular, are examples of perplexities of this study that are addressed in the focus group session. The "topical subquestion" about technological features which students perceived as necessary, helpful, or ideal is designed to meet "anticipated needs" for specific data (Creswell, p. 99).

Focus Groups. Participants involved in the organized focus group sessions were asked to respond to a series of six questions and their responses were audio-taped. Participants who were not involved in organized focus group sessions were invited to record written responses to any or all of the focus group questions.

Key issues raised in the quantitative section of this study were addressed in further depth by the qualitative section. At this point participants had an opportunity to reflect on, then either to discuss or to record their perceptions of the value of and challenges posed by the concept of taking AP courses in general, and taking AP courses online, specifically.

Participant comments on specific technological features perceived as necessary, helpful and ideal revealed what participants wanted in and expected from the instructional design of an online learning environment, as well as their reasons for their ratings of specific instructional design features. The general question about closing thoughts on the concept of taking AP course work online allowed participants to bring forward issues that had not been raised by this study but may, in fact, be significant factors in instructional development or design.

The final question about closing thoughts on the experience of participating in this study was included for two reasons: 1) to elicit participant feedback on the experience of being involved in the study in order to inform me of unidentified problems with the research design and delivery, and 2) to create a forum for any necessary debriefing participants required.

Secondary Data Sources. In order to contextualize the data collected from participants, informal interviews, regarding school-based AP course offerings and the scheduling of AP courses, were conducted with school administrators; government policies and report documents were examined; AP Canada and College Board reports were reviewed. Data from each of these additional sources were used in the analysis of participant responses to both the quantitative and qualitative portions of this study.

CHAPTER 4

Data Analysis

Mirroring the data collection process, three procedures were used to analyze the results of this study. The first step was a statistical analysis of the quantitative data; the second involved the aggregation of and synthesis of the qualitative data; the final part of the process was comprised of contextualizing these results within the background of secondary data, as well as relevant literature on gifted and talented students' needs, Web-based distributed learning models, and instructional design.

Quantitative Data Analysis

Responses to the quantitative section of the study were scaled to provide numerical data to be used to analyze the study results. These scales are recorded in Appendix C: Quantitative Data Analysis Scales.

Existing Awareness of and Experience with the AP Program. This set of data was collected from the first section of the questionnaire, which was completed before participants attended the presentation on Advanced Placement course work (See Appendix E). The purpose of this section was to determine whether the success of an AP online program would, in part, depend upon advertising to raise awareness. Figure 5 illustrates the levels of awareness of and experience with the AP program that each of the study participants reported.

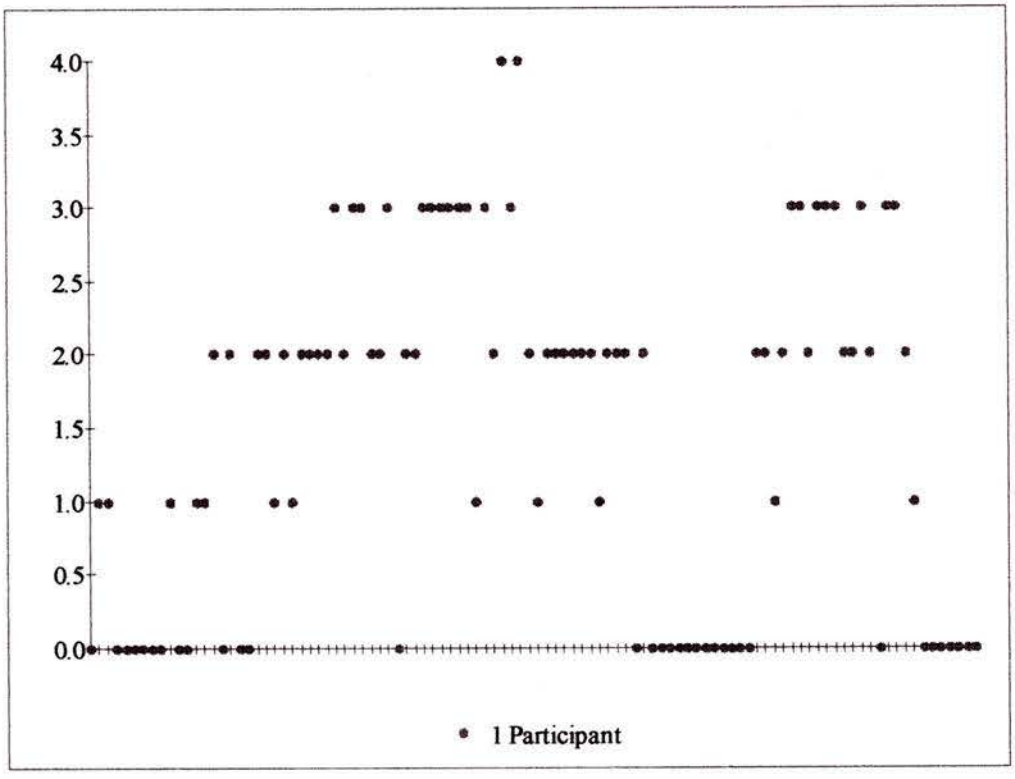

Figure 5

Awareness and Experience Levels

Of the 102 participants, 34 had no experience with or awareness of the AP program. A further 12 participants were aware that AP courses had been offered at their schools at some point in the past five years, but had neither specific knowledge of nor direct experience with the program; 34 were aware that one or more AP courses were available in their schools at the time of the study; 20 participants were enrolled in one or more AP courses at the time of the study. Only 2 participants had completed an AP course and written an AP exam. These results suggest that almost half of current high-achieving British Columbian secondary students have insufficient awareness of or experience with the AP program to seek AP credits independently. Lack of awareness of and experience with the AP program may negatively influence student decisions to seek AP credits; therefore, increasing student awareness of and knowledge about the AP program will likely have a positive influence on enrollment figures.

Policy Awareness / Value for AP Course Work. This set of data was collected from the second section of the questionnaire, Part I: B. Awareness About AP Courses, which was completed before participants attended the presentation on Advanced Placement course work (See Appendix E). Pre-presentation levels of understanding about Ministry, university, and college polices regarding AP credits, and beliefs about the value of taking AP courses are displayed in Table 1.

Table 1
Policy Awareness / Value for AP Courses

Statistical Measure	Policy Awareness (/24)	Value for AP Courses (/8)
Mean	12.27	5.80
Standard Deviation	5.30	2.00
Correlation	0.32	
Level of Significance	0.01	

The relatively low mean score of 12.27 out of a possible 24 points tends to suggest that many participants had insufficient or incorrect information about policies regarding AP credits. In spite of this lack of accurate knowledge, the mean score of 5.80 out of a possible 8 points suggests that participants did strongly value AP course work. Therefore, it is possible that many gifted and talented students value challenging curricula regardless of whether or not it is officially recognized. This finding concurs with Daniel and Cox's (1989) report that able learners seek out increased challenge through accelerated curricula. However, the standard deviation within each of these sets of scores is quite broad, suggesting that there are significant differences in both policy knowledge and value for AP course work within this group. Further, the correlation between policy knowledge and value for AP course work is strong enough to indicate that these scores are covariant. Those students who do have more knowledge of AP credit policies may be more likely to value AP course work. Valuing AP course work may influence enrollment decisions. Therefore, it is likely that increasing knowledge of

Ministry of Education, university, and college AP credit policies may increase student enrollment in AP courses.

Self-Efficacy / Interest in AP Course Work.

What is all knowledge too but recorded experience, and a product of history; of which, therefore, reasoning and belief, no less than action and passion, are essential materials?

Thomas Carlyle

Student beliefs about what they may possibly accomplish will likely influence what they attempt to accomplish. Therefore, Questionnaire Part I: C: Post Presentation Questions: 1. Comfort Levels, Questions 1 to 3 were designed to measure participants' self-efficacy levels and Questions 4 and 5 were designed to measure participants' interest in the concept of enrolling in AP course work (See Appendix E). A comparison of these sets of scores is illustrated in Table 2.

Table 2
Self-Efficacy / Interest in AP Course Work

Statistical Measure	Self-Efficacy (/12)	Interest in AP Course Work (/8)
Mean	9.35	5.89
Standard Deviation	1.59	1.68
Correlation	0.62	
Level of Significance	0.001	

Boverie, Nagel, McGee, and Garica's (1998) study indicates that those students who report high self-efficacy ratings also report high satisfaction levels in online learning environments (p.4). The mean score of 9.35 for participants' self-efficacy ratings shows that gifted and talented students have strong beliefs in both their ability to and their motivation to pursue challenging goals. Participant motivation for pursuing challenging curricula is reflected in the mean score of 5.89 for interest in the challenge of AP course work. The standard deviations among this scores are similar. Further, the correlation between self-efficacy ratings and interest in AP course work is strong. These

findings are in agreement with Parke's (1992) statement that gifted and talented learners tend to seek academic work beyond the regular curriculum, searching for a depth of understanding about divergent topics, mirroring the kind of academic pursuits that normally would be expected of older learners. Therefore, it is very likely that the results of this portion of the study can be generalized to the broader population of gifted and talented secondary students throughout British Columbia. These students believe in their abilities, have confidence in their motivational levels, and wish to pursue challenging goals. These students are interested in pursuing the challenge of AP course work and they have reported the key learner characteristic which clearly correlates with learner satisfaction in a virtual learning environment.

Technological Knowledge and Confidence / Interest in AP Course Work.

Responses to Questionnaire Part I: C, Questions 6 and 7 were designed to measure participants' technological knowledge and confidence and Questions 8 and 9 were designed to measure participants' interest in the concept of enrolling in AP course work in an online setting (See Appendix E). Perhaps as a result of the wording of the questionnaire, 27 participants chose to answer either Question 6 or Question 7 but not both. Therefore, in order to accurately describe participant responses, the analysis of this data had to be split into separate statistics. A comparison of these sets of scores is illustrated in Table 3.

Table 3
Technological Knowledge & Self-confidence / Interest in Online AP Course Work

Statistical Measure	Technological Knowledge (/4)	Technical Self-confidence (/4)	Interest in Online AP Course Work (/8)
Mean	2.77	2.75	5.48
Standard Deviation	1.07	1.39	1.50
Knowledge / Interest Correlation	0.34		
Knowledge / Interest Significance	0.001		
Confidence /Interest Correlation	0.16		
Confidence /Interest Significance	0.1		

The mean score for participant reports of sufficient technological knowledge to consider enrollment in online course work was 2.77 of a possible 4 points. The mean score for participants' belief in ability to attain sufficient technological knowledge to consider enrollment in online course work was 2.75 of a possible 4 points. Combined, these statistics suggest that participants were fairly confident that they either had the technological knowledge to consider online course work or were confident that the technological knowledge to consider online course work was attainable.

However, the statistics generated by those participants who reported specific technological knowledge scores correlate much more significantly to interest in online AP course work than the statistics generated by those participants who reported confidence in their ability to learn the necessary technological skills that would be needed in an online learning environment. One explanation for this difference may be that although participants who would have to acquire new technological skills felt quite confident that they could do so, there may have been considerable variation of degrees of willingness to attempt to learn new technological skills while simultaneously undertaking very challenging curricula.

General Interest / Online Interest. Comparative data, which explore a possible relationship between general interest in AP course work and interest in online AP course work, are recorded in Appendix E. These data are illustrated in Table 4 and Figure 6.

Table 4
General Interest / Online Interest

	Expressed Interest in 1 AP Course	Expressed Interest 2 or More AP Courses	Total Interest in AP Course Work	Expressed Interest in 1 Online AP Course	Expressed Interest 2 or More Online AP Courses	Total Interest in Online AP Course Work
Questionnaire Score	5 -6	7-8	5-8	5-6	7-8	5-8
Percentage of Participants	41%	27%	68%	52%	21%	73%

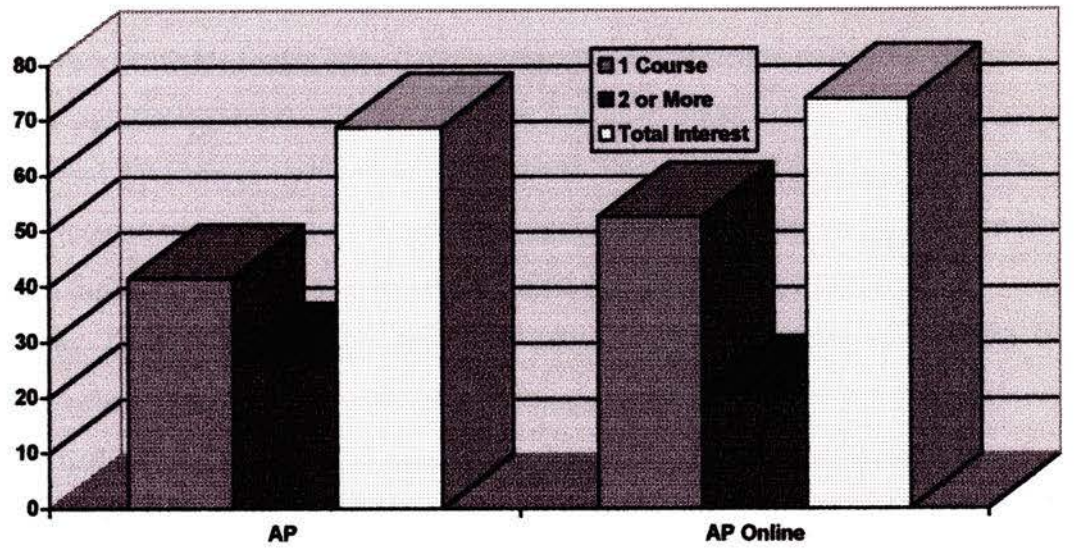

Figure 6

Percentage of Participants Expressing Interest in AP Course Work

In spite of results that indicate that some participants' may not wish to learn new technological skills while learning new and challenging curricula, scores for interest in taking online AP course work were, in fact, slightly higher than scores for general interest in taking AP course work. At first glance, this difference seems to be contradictory. However, while interest in taking only one AP course increases in the online category, interest in taking more than one AP courses drops in the online category. It is possible that participants felt that they were capable of learning new technological skills while learning one new curriculum, but not while attempting more than one new curriculum.

One further explanation for this apparent contradiction might be that a sense of "the real world" influenced responses. Approximately one third of participants (32 of 102) attended schools where no AP courses were offered. Classroom-based AP course work may have been perceived as an unrealistic concept by these participants.

A third explanation of this trend may be connected to the differences between scores in schools where several classroom-based AP courses are available to students and schools where few or no classroom-based AP courses are available to students. A negative correlation of 0.24 occurs when availability of classroom-based instruction in

AP course work is compared to interest in online AP course work: the more classroom-based courses available to students, the less interest is expressed in online AP course work. The significance level of this correlation, however, drops to 0.02. Even in schools where several AP courses were offered, participants did express quite strong interest in online AP course work. Perhaps the lesser but sustained interest reflects the fact that the schools in the study were not able to offer specific AP courses that interested participants. Of the participating schools, one offered seven AP options, two offered three, one offered one, and four offered no AP courses.

Broader statistics about AP course offerings and enrollments in schools are difficult to determine because those students who have enrolled in classroom-based AP courses do not all write AP exams. At (GV-S1), 76 students were enrolled in AP courses at the time of this study; however, only 20 students chose to write May 1999 AP exams. Further, some students who have not taken classroom-based AP courses do choose to challenge AP exams. At (NS-S1) none of the study participants had taken any AP course work; however, all 7 of these participants were registered to write May 1999 AP exams. These variations make it difficult to compare the classroom-based experiences of current AP candidates (students who write AP exams). The results of this study can only be said to show that among study participants there was a wide range of difference in the amount of classroom-based preparation available to students who wished to write AP exams.

British Columbian students who write AP exams, however, have one significant commonality: they tend to belong to student populations from larger schools. This trend is documented in Appendix D and illustrated in Figure 7.

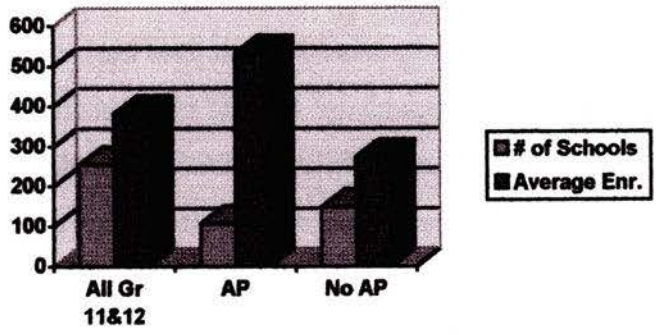

Figure 7

Enrollment / AP Candidates

All Gr. 11 & 12: Enrollment Statistics for B.C. (1998) Grades 11 & 12 [1]
AP: Public Schools with AP Candidates [2]
No AP: Public Schools without AP Candidates

Notes:[1] British Columbia Data and Transcripts Branch (1998). Report 1556B. Victoria: Ministry of Education.
Available: http://www.bced.gov.bc.ca/k12datareports/standardreports/frames/98sldab/1556b.txt
[2] The College Board (1998). Resource Package: Canada 1998. Kelowna: AP Canada.

Of the 255 public secondary schools in BC which had Grade 11 and 12 enrollment in 1998, 107 (or 42 percent) were listed as schools with AP candidates in 1998; of those 255 schools, 148 (or 58 percent) did not have AP candidates in 1998. Schools with 1998 AP candidates made up 58.5 percent of total enrollment; schools without 1998 AP candidates made up 41.5 percent of total enrollment. Average enrollment in schools with 1998 AP candidates was 531.8 students, while average enrollment in schools without 1998 AP candidates 273.1.

The percentage of BC public secondary schools that do have AP candidates illustrates the strong value that schools and students have for the AP program. The concentration of AP candidates in schools with larger enrollments suggests that an inequity is occurring. Obviously schools with smaller enrollments cannot offer the range of options available to larger schools because lower enrollments restrict funding. An AP online option would offer a redress for this inequity.

Course Preferences. Study participants were asked to review all of AP course descriptions (available to them both in print and on the web site), then to select and priorize those courses which would be their top three choices (See Appendix E). This part of the study was designed to limit course preference responses in order to provide a clear indication of which courses elicit strongest interest, and therefore, which courses would likely be successfully offered. Interpreting the top three selection choices involved consideration of four factors: 1) the number of times a course was selected, 2) the priority participants assigned to each choice, 3) whether a competing classroom-based course was offered in the participant's school, and 4) the comparative data of past provincial AP exam statistics. Table 5 describes each of the four criteria under consideration in the interpretation of this data. The raw data of the number of times each course was selected and the interpretive data that includes priority ratings are illustrated in the Table 5 and Figure 8.

Table 5
Participants' Top Ten Course Selections

Top Ten courses	Priority Value *	No. of times Selected	No. of Students who could be influenced by a competing classroom-based course / 102	No. of AP Exams Written in 1998 in BC [1]
Biology	98	41	19	298
English Language & Composition	57	23	0	264
Psychology	52	27	0	32
Calculus	51	25	45	** 1326
Chemistry	45	28	21	315
English Literature & Composition	36	19	50	1018
Computer Science	26	17	21	*** 159
Physics B	26	14	21	262
Spanish Language	21	9	21	18
European History	20	10	15	101

* 1st Choice = 3 priority points; 2nd choice = 2 priority points; 3rd Choice = 1 priority point
Priority Values are sums of total points.

** Combined statistics for Calculus AB (1223) and Calculus BC (103).

*** Combined statistics for Computer Science A (131) and AB (28).

[1] The College Board (1998b). Canadian and Global Summary Reports. New York: The College Board.

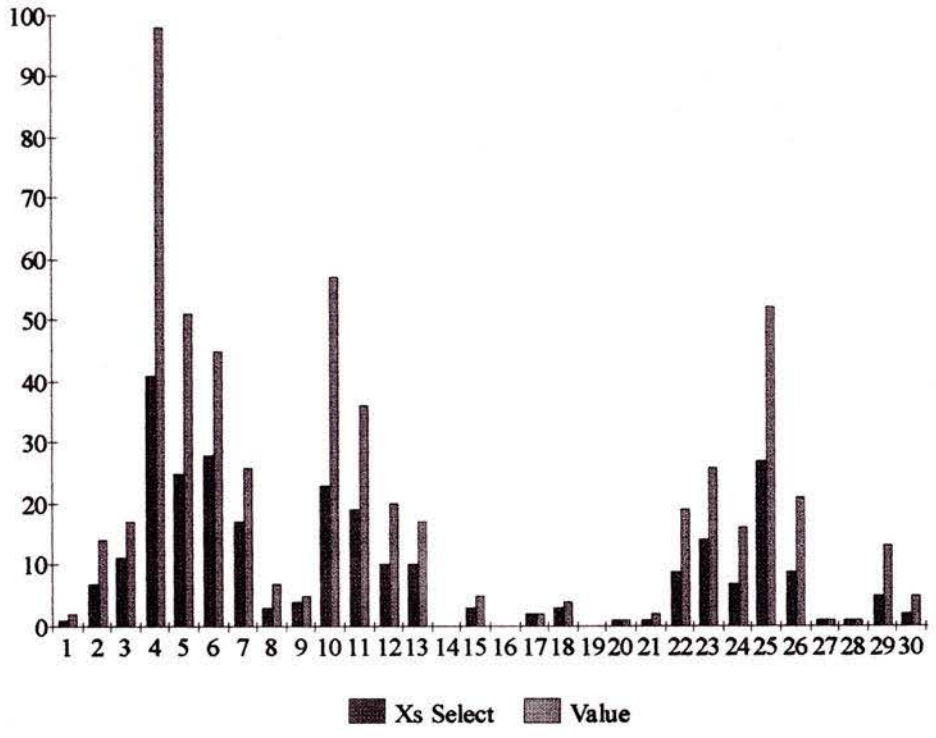

Figure 8
Course Preferences

Vertical Legend:
Xs Select ..... Times selected as a course preference
Value ..... 1st Choice = a score of 3 points
..... 2nd Choice = a score of 2 points
..... 3rd Choice = a score of 1 point

Horizontal Legend:

1 ..... Art History
2 ..... Art-Drawing
3 ..... Art-General
4 ..... Biology
5 ..... Calculus
6 ..... Chemistry
7 ..... Computer Science
8 ..... Economics Micro
9 ..... Economics Macro
10 ..... English Language & Composition
11 ..... English Literature & Composition
12 ..... European History
13 ..... French Language
14 ..... French Literature
15 ..... German Language
16 ..... German Literature
17 ..... Government & Politics US
18 ..... Government & Politics Comp
19 ..... International English Language
20 ..... Latin: Vergil
21 ..... Latin: Literature
22 ..... Music Theory
23 ..... Physics: B
24 ..... Physics: C
25 ..... Psychology
26 ..... Spanish Language
27 ..... Spanish Literature
28 ..... Statistics
29 ..... US History
30 ..... Environmental Science

Notes: * Participants did not believe sufficient information was available to distinguish between either Calculus AB & s BC or Physics C - Mech. & C - E&M; therefore, these choices were combined.
** Participants added Environmental Science to the questionnaires.

Eight of the top ten course selections made by study participants match eight of the top ten AP courses, in terms of number of exams written in British Columbia in 1998. If online AP courses are developed, beginning course development with selections from these eight courses is most likely going to be met with strong enrollment results. Participants' preferences for Psychology and Spanish Language may indicate either a variance particular to the participants involved in this study or an interest that is not being met by current course offerings in schools.

Economic Considerations. This set of data was designed to measure possible correlation between participants' beliefs about their ability to pay for online AP course work and attitude toward the concept of taking AP courses online (See Appendix E). This section of the study was purposefully placed after measures of interest in order to decrease the possibility that measures of participant interest would be initially influenced by the predicted cost of online course work. The purpose of this section is to determine the percentages of students who are interested but would need financial assistance in order to participate in AP online course work. The results are recorded in Table 6.

Table 6
Economic Considerations / AP Interest

Statistical Measure	Economic Confidence (/19)	OL AP Interest (/8)
Mean	12.11	5.48
Standard Deviation	2.87	1.51
Correlation	-0.10	
Significance	Null: Variables Unrelated	
Participants Who Expressed Interest in 1 or more AP Courses and Expressed Significant Concern (< 60% Confidence) About Ability to Pay	35 %	

Participant interest in online AP course work (73 percent of participants expressed interest in enrolling in one or more AP courses). However, of these interested participants, 35 percent expressed doubt when they were asked about their ability to pay the projected course tuition costs ($600 CAN), as well as examination costs (approximately $140 CAN or approximately $100 US). The number of prospective online AP candidates decreases by 48 percent when economic considerations are taken into account.

Gifted and talented students who are self-confident and self-motivated, gifted and talented students who are seeking challenging curricula and new academic opportunities, do not share a particular economic status – economic status data showed no correlation to the other shared qualities of the participants in this study. However, the economic status of gifted and talented students in British Columbia is likely to reduce the probable number of online AP enrollments by approximately half if no form of tuition subsidy or cost-sharing arrangement with schools can be arranged.

Access to Technology. This section of the study was designed to measure possible correlation between participant access to technology in the home and at school and participant attitudes toward taking AP courses online. These data are recorded in Appendix E and are illustrated in Table 7.

Table 7
Online AP Interest / Access to Technology

Statistical Measure	AP Online Interest (/8)	Access to Tech. (/8)	Perceived Need (/8)
Mean	5.48	6.63	5.90
Standard Deviation	1.51	1.44	1.32
Correlation (Int./AT)	.13		
Significance	Null: No Significance		
Correlation (Int./PN)	-0.02		
Significance	Null: No Significance		

The purpose of this section was twofold: 1) to determine participants' actual access to technology, and 2) to determine whether beliefs about access to technology influenced student attitudes toward taking AP course work online. No correlation was found between either actual access or perceived need for access and student attitudes toward taking AP course work online. One possible explanation for these results is that the mean scores for actual access are higher than the scores for perceived need for access. Participants expressed the belief that they had slightly more than the basic necessary access to technology to consider online course work. However, data collected from focus group sessions somewhat contradict this generalization. Focus participants expressed concern that access to technology might be problematic.

Technical Support in an Internet Learning Environment. The purpose of this section was to determine which electronic and human supports participants perceived as necessary to make the program worthwhile, helpful to make the program more attractive, and optimum to make the program very attractive (See Appendix E).

The range of responses to this section of the questionnaire may be a result of most participants' lack of experience with online learning. Lacking this experience, participants had to first imagine what communication needs they would encounter in a Web-based instructional environment, then imagine which avenues would best address those needs. Nevertheless, their responses tend to reflect the usage patterns of online learners described in previous studies. Participant responses to this section of the questionnaire displayed in Figure 9.

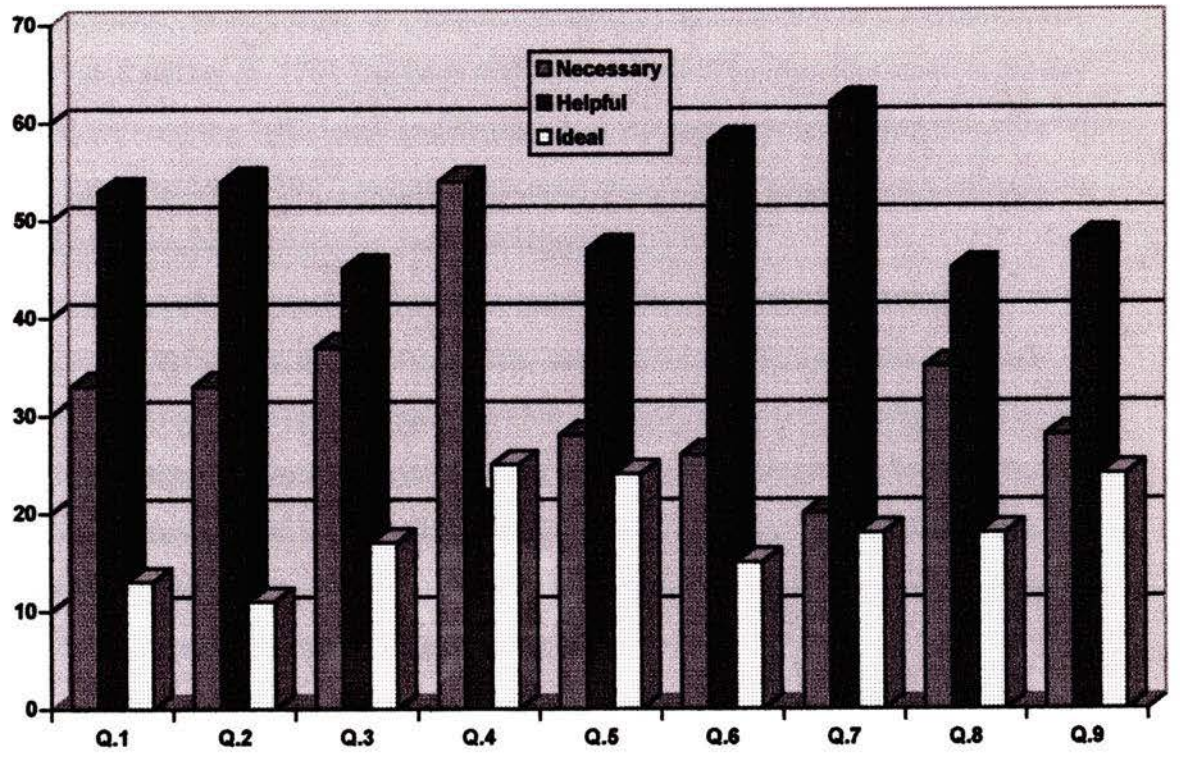

Figure 9

Technical Support in an Internet Learning Environment

Vertical Axis

Percentage of participants

Horizontal Axis

Q.1 Telephone access to the instructor

Q.2 Telephone access to technical support

Q.3 Online access to technical support

Q.4 Email access to the instructor

Q.5 Email access to other students

Q.6 Bulletin board access to the instructor

Q.7 Bulletin board access to other students

Q.8 Chat line access to the instructor

Q.9 Chat line access to other students

Email access to the instructor was rated more highly by participants than any other communication media and this rating is highly consistent with recent studies. Corrent-Agostinho, Hedberg, and Lefoe (1998) report email as the "medium most

frequently used" in their study of computer mediated communications in a Web-based instructional setting (p. 176). Dabbagh and Schmitt (1998) suggest that email is the key medium for ensuring "efficiency and flexibility in instructor-student communication" (p. 109). Patel and Volk (1997) suggest that email maintains its popularity among cohorts of students because it is familiar and convenient (p. 233).

Online access to technical support received the second highest rating by participants. Predictably, students expressed concern for readily available technical support as a critical scaffolding feature within a technology-based learning environment. Reliable equipment connected to an efficient infrastructure, augmented by flexible, effective courseware and supported by easily available access to technical help, are each equally important aspects to consider in a technology assessment, a required component of any Web-based instructional plan (Patel & Volk, p. 234).

Telephone and chat line access to the instructor were each also rated relatively highly by participants. These ratings reflect the findings of Boverie, Nagel, McGee and Garcia (1998), Gray (1998), and Ross and Schulz (1999), where the need for a strong sense of the instructor's social presence in a virtual learning environment is identified and described as best-sustained by telephone and synchronous online communications. "As students require timely help," the ability to contact a tutor at "a crucial moment," in the learning process is best facilitated via multiple channels of communications (Thomas, Carswell, Price, & Petre, 1998; see also Perraton, 1987; Boverie, et al., 1998).

The lesser concentration of emphasis on tools for collaborative work, specifically bulletin board features, may be connected to less familiarity of with the purposes for which these tools have been designed. Corrent-Agostinho, Hedberg, and Lefoe (1998) suggest that "as exposure to [collaborative] tools ... increases, so too, [students'] ability to use them to facilitate the problem-solving process" (p.179).

Qualitative Data Analysis

Responses to Questionnaire Part II: Focus Group Questions were recorded in three documents: Appendix: F.2: Complete Focus Group Transcripts, Appendix F.1 Coded Responses to Focus Group Questions, and Appendix F : Table of Coding Categories for Responses to Focus Group Questions. Both audio transcript and written responses to the focus group questions were reviewed and coded. These codes became the grist for forming categories to organize the description of discussions and comments prompted by the focus group questions.

A three-step data analysis spiral: "describing," "classifying," and "interpreting" data (Creswell,1998, pp.148-49) was used to prepare the content for the descriptive report. Participants' statements were analyzed using: concept trees, propositions, reflective notes, and comparisons (Janesick, 1998). These analytical processes initiated pattern establishments. Pattern establishments were conducted through identification of themes, followed by selection of comparable and contrasting statements about those themes (Janesick, 1998). Establishment of patterns assisted in forming correlations between categories of information which supported, explained, or challenged those correlations recorded in the quantitative section of the study. Categorical aggregation of established patterns involved selection of a collection of instances of participant statements about: 1) perceived benefits of taking AP courses; 2) concerns with and questions about the concept of taking AP courses, in general; 3) perceived benefits of taking AP courses online; 4) concerns with and questions about the concept of taking AP courses online; 5) reasons for ratings of specific technological features for an online learning environment; and 6) general comments on the study. Generalizations, developed from this data analysis, in combination with quantitative data, were used to predict probable response from British Columbian secondary students to the offering of AP courses online.

Organization of Focus Group Discussions and Collection of Written Comments.

Focus groups were organized at three of the eight study sites. Participants consisted of

three groups of four volunteers who had participated in the quantitative section of the study. School administrators arranged to have a quiet and comfortable setting for the focus group sessions at each of these sites. Session times ranged from one to one and a half hours. Snacks and drinks were provided for participants. Each participant was given a numbered place card so that participants were able to refer to each other as Participant #1, #2, #3, or #4, therefore, avoiding the recording of actual names on the audio tape.

All participants in the study received a copy of the focus group questions and all were invited to provide written responses to those questions. Most often very little time was available at the end of the full-group sessions. Only fourteen full-group participants chose to include written comments to the qualitative questions.

Focus Group Settings. The first focus group (SD-S1) was held in the South Coast region in a suburban setting at a relatively large school (Enrollment: Grade 11: 247; Grade 12: 259). This focus group included three males and one female. All were Grade 12 students. One male participant had not enrolled in or experienced AP work, but each of the others was working toward a May, 1999 AP exam. At (SD-S1) seven AP courses were offered in the 1998-99 school year: Calculus, English Literature & Composition, French Language, Spanish Language, Chemistry, Physics, and Computer Science. These curricula were blended with provincial curricula within regular course blocks which included both AP and non-AP students. Teachers were allowed one week of time-in-lieu to compensate for planning and teaching these extra curricula and for meeting with groups of AP students outside class time.

The second focus (OS-S1) group was held in the Southern Interior region in smaller urban community in a primarily agricultural area at a somewhat smaller school (Enrollment: Grade 11: 142; Grade 12: 165). The second focus group included two males and two females. All were either Grade 11 or Grade 12 students. None had enrolled in or experienced AP course work. While (OS-S1) had AP exam candidates in 1997, no AP courses or candidates were reported for either 1998 or 1999.

The third focus group (NO-S1) was held in the Central Interior region (Enrollment: Grade 11: 187; Grade 12: 118). Students in the school's catchment area

were from both urban and rural areas. At (NO-S1) one AP course, European History, was offered in the 1998-99 school year. It was offered as a separate course with its own timetable block. The third focus group included one male and three females. All were Grade 11 students. None had enrolled in or experienced AP course work.

Demographic and School Descriptions for Participants Who Submitted Written Comments. (PG-S2) had a reported enrollment of (Grade 11: 274; Grade 12: 221). Participants at (PG-S2) were primarily from an urban area. At (PG-S2) three AP courses are offered: Biology, Calculus, and English Literature & Composition. Approximately 56 students were enrolled in these courses in the 1998-99 school year. AP and provincial curricula were blended. Students enrolled in AP sections of these blended courses received the equivalent of one-half of one block of instruction in the semester in which AP exams were written. Participants at (PG-S2) were all Grade 11 students; none were currently involved in AP course work.

(GV-S1) had a reported enrollment of (Grade 11: 328; Grade 12: 358). Participants at (GV-S1) were exclusively from an urban area. At (GV-S1) three AP courses were offered in the 1998-99 school year: Calculus, English Literature & Composition, and French Language. Seventy-six students were enrolled in these courses, and of these 76, 20 students wrote 1999 AP exams. Students in the AP program at (GV-S1) typically had taken honours sections of their subject area(s) from Grade 8 through Grade 11. At the Grade 12 level, AP Calculus and AP English courses were offered as separate courses which were paired with provincial courses in the timetable; therefore, students received a total of 12 hours per week of instruction in their AP subject area(s) during the semester in which AP exams were written. AP French Language exam candidates had each been French immersion students. Participants at (GV-S1) were all Grade 12 students and were all enrolled in AP courses.

(NS-S1) had a reported enrollment of (Grade 11: 176; Grade 12: 164) and offered no AP courses in a classroom setting. An AP advisor met with students who wished to challenge AP exams. Students independently sought the advice of teachers of the course area(s) of the exams they wished to challenge. Participants at (NS-S1) were all in Grade

12 and were all registered to write 1999 AP exams; however, none of them had taken any formal AP course work.

While (OS-S2) (Enrollment: Grade 11: 65; Grade 12: 65) had AP exam candidates in 1997; no AP courses or candidates were reported for either 1998 or 1999. Participants at (OS-S2) were drawn from Grades 11 and 12; none of them had any experience with the AP program and none were registered to write a 1999 AP exam.

At (PG-S1) (Enrollment: Grade 11: 45; Grade 12: 26) neither past nor present involvement in AP course work or exams was reported. Participants at (PG-S1) were all in Grade 12; none of them had any experience with the AP program and none were registered to write a 1999 AP exam.

Analysis of Responses to Focus Group Questions

Question 1: AP Benefits. The first question addressed in each focus group was: "Do you think that AP courses would benefit you? Why or why not?" The six themes that emerged in this discussion are illustrated in Figure 10.

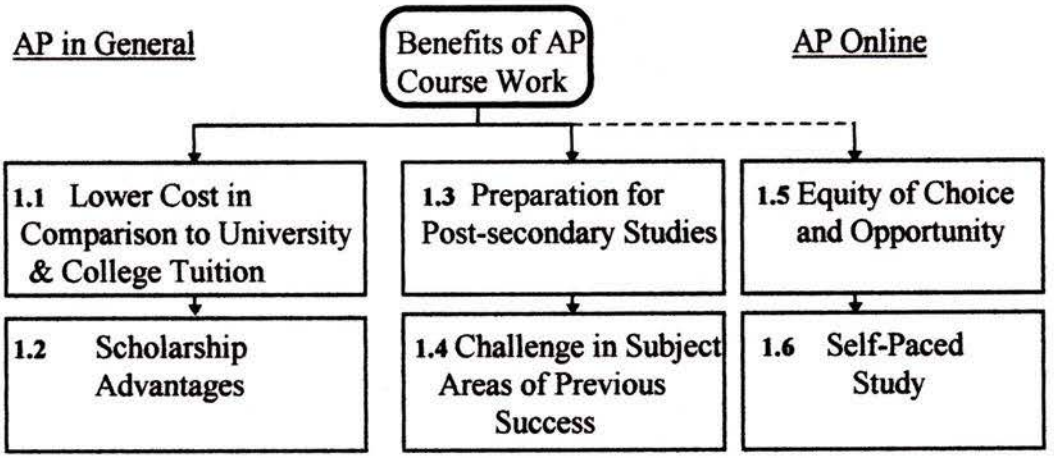

Figure 10

AP Benefits

Responses to this question were divided into two streams:1) AP course work in general, and 2) AP course work offered online. Participants identified cost-efficiency benefits, scholarship advantages, preparation for post-secondary study, and academic

challenge as the major benefits of AP course work in general. Equity of choice and opportunity, as well as a perception that online study would allow for a self-paced approach to study, were identified as benefits of pursuing AP course work in an electronic learning environment.

The first theme that emerged in the discussion of benefits of AP course work, in general, was the comparison of the cost of acquiring university credits through the AP program to the cost of acquiring equivalent credits in a university setting. Participants who had access to classroom-based AP instruction compared the cost of an AP exam to university course tuition and concluded that an AP credit was "a lot lower," that taking AP courses in a school setting "saved money," which would, in turn, "alleviate" a "considerable amount of debt."

Scholarship advantages were perceived as a second economic benefit of AP course work by six participants. "Financial support" for "university or college" was stated to be one of the most "appealing" aspects of AP achievement. The belief that AP courses help students acquire scholarships was broadly agreed upon. Scholarships were perceived as essential to many participants' post-secondary goals, both as an avenue to make post- secondary study possible and as an avenue "to go to a university of [personal] choice."

This perception that AP or other honours-level course credits, such as International Baccalaureate (IB) credits, are valued by university scholarship coordinators is supported by a statement from a scholarship coordinator at a British Columbian university. In an email message in response to an inquiry about "what role (if any) that AP or IB credits play in undergraduate scholarship selection committee decisions," this coordinator explained:

> Initially all courses are considered in the same manner. That is, that even though a course is designated as an IB or AP course, for admission to the University, that course would be considered a 'regular' course. For scholarship purposes, the University uses admission averages generated from all (regular) courses to establish a short list of students who go on to have their applications considered by a committee. It is not until the committee level that IB or AP courses are considered. At this a student would be recognized for having taken more challenging level of course work (See Appendix G for documentation).

Final scholarship decisions are made at the committee level; therefore, participant perceptions that AP credits are advantageous for scholarship applicants appear to be accurate perceptions.

As well as economic advantages, participants identified academic advantages. Increased preparation for post-secondary academic work and increased academic challenge in a high school setting were both appealing features of the concept of AP course work to study participants. Boverie, Nagel, McGee and Garcia's (1998) study findings that show those students whose reasons for participation in virtual learning environments include: "challenge, curiosity, and mastery," are consistently more satisfied with online learning experiences (p. 4), bode well for gifted and talented learners' success in a Web-based Advanced Placement instructional program.

A third theme which emerged was the benefit of increased preparation for post-secondary study that AP course work could provide. Five participants from four sites stated the belief that AP course work would promote increase subject-area knowledge and stronger preparation for "the next level of learning after high school." Several participants expressed concern about not being prepared for university and a belief that course work which could increase their preparedness "for university was great." A comment in the focus group at (SD-S1) that "any additional education is great" evoked immediate and enthusiastic support from each of the other group members. As well as preparing students for university-level academics, participants felt that AP course work would also improve their entrance applications, stating that "course requirements toward university" would improve individuals' chances for acceptance. One participant stated the belief that the "experience of the [AP] exam should help" with post-secondary studies.

"Our gifted and talented population must have a full service education if we expect these students to thrive in the manner in which they are capable.... These students must be involved in educational experiences that are challenging and appropriate to their needs and achievement levels" (Parke, 1992, p. 1). Gifted and talented students seek challenges that standard curricula cannot always provide.

Participants in this study identified AP course work as "a chance to be more challenged compared to the usual BC curriculum," as helpful because they "don't have to try very hard in school to get really good marks." Bright and motivated young people who are seeking challenging academic curricula should be provided with that curricula.

Equity of choice and opportunity, as well as the perceived ability to study at one's own pace, were identified a significant benefit to being able to pursue AP course work in an electronic learning environment. One participant at a school where AP courses were available in a classroom-based setting posed the question: "We are a very lucky school and we have AP's, but what about all the other schools that don't?" He answered his own question with the statement that he believed, "The Internet is a good way to go." Seven participants supported the view that an electronic learning environment could provide access to "otherwise unavailable" AP courses. Eight participants acknowledged that provision of AP course work in an online setting would be especially helpful to students in "small schools" or "small towns." Participants valued the "option to look at broader topics," and having access to "a lot of information ....very valid stuff that isn't offered " in their schools. Participants whose schools offered no AP courses stated that online instruction could provide "more choices and maybe a chance to do well in life," that online instruction would be helpful because some students "have no other option but to just teach this to" themselves. Using the Internet as a medium for distance education and the Web to "overcome the barriers of time and space in teaching and learning" is a way to provide equitable access to instruction (Kerka, 1996, p. 2).

Three participants stated the perception that online study would allow for self-paced study. No concrete explanation for this perception exists in the study documentation. However, there is concrete evidence that gifted and challenged students are seeking challenges. One of those challenges may be to work at a faster pace than regular classroom work progresses. Traditionally, distance learning programs have supported independent, self-paced learning (Patel & Volk, p. 231); therefore, participant expectations for self-paced learning are understandable.

Question 2: Concerns About AP Course Work. The second question addressed in each focus group was: "Do you have any concerns about the idea of taking one or more AP courses?" The three themes which emerged in this discussion are illustrated in Figure 11.

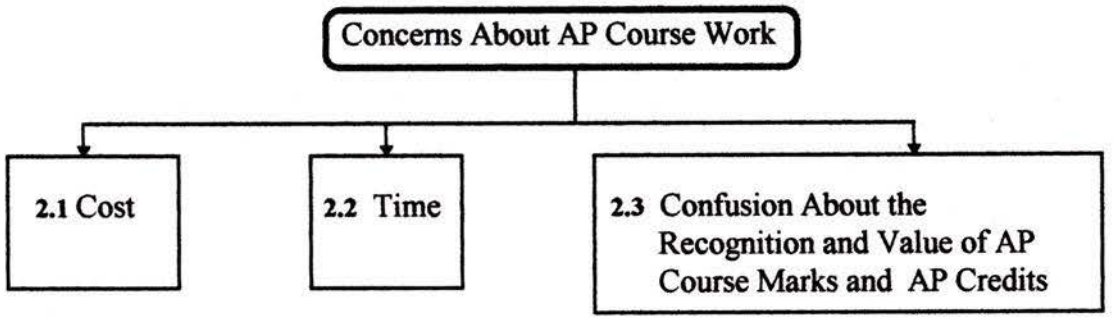

Figure 11

AP Concerns

Participants' concerns about the concept of taking one or more AP courses focused on the cost and the time this commitment would involve. Arising from the discussion of these two concerns were several questions about how AP courses are credited, graded, and recognized.

Cost was of specific concern to seven of the participants. Four of the participants who raised the issue of cost described their concern as a personal financial concern that would influence their decision to enroll. Three participants described this concern on a more generalized basis. This latter group expressed concern that the cost might restrict enrollment: "Some people are in ... bad financial situations. It could be hard for them to pay for these courses"; "They need to think more about the price ... make it more affordable to students"; "It's rather expensive ... not as many people would be able to afford it." This concern about the projected cost of online tuition is supported by the results of the quantitative part of this study that showed that without some form of tuition subsidy or cost-sharing agreement with schools financial restraint may reduce enrollment by nearly 50 percent.

Time was stated as a concern by seven participants and each of these statements was met with general agreement from other group members. One participant who was currently enrolled in a classroom-based AP course stated that " most people in the Grade 12 level that are taking these AP courses have busy schedules." Overcoming the time restraints of these busy schedules was the most challenging part of this study. Many students who initially expressed interest in participating in this study were not able to do so because of a variety of competing time-commitments, such as, leadership seminars, band and theater performances, athletic competitions, and preparation for upcoming exams. This concern about competition with time for sports, time for regular course work, and time for other extra-curricular activities is a serious concern. Post-secondary institutions do not only consider academic achievement when they select students for either admissions or scholarships; a strong record of "extra curricular activities" is also of significant importance to decision-makers in post-secondary institutions (See Appendix G for documentation).

Gifted and talented students recognize the need to demonstrate commitment to their schools through extra-curricular involvement, to their communities through volunteer involvement, to their future opportunities through careful attention to detail in each area of their academic lives. One tendency of this group is to become over-committed, and as a result, to feel excessive stress. Therefore, if an online AP program is going to be successful it will need be flexible enough to allow students some control over assignment schedules. Well-designed flexible pacing provides "a steady challenge without crippling frustration or unreasonable pressure" (Daniel & Cox, 1989, p. 1).

Numerous questions about the Ministry of Education's, The College Board's, and universities' policies regarding AP grades and credits marked each focus group session. As was demonstrated by the low scores on the section of the quantitative questionnaire that dealt with policy awareness (a mean score of 12.27 out of a possible 24 points), student awareness and understanding of these procedures is inconsistent (the standard deviation within this set of scores was 5.3) and incomplete. Many questions were raised because participants were not well-informed about these policies and procedures. Therefore, participants were unsure whether AP curricula could be combined with

provincial curricula, if grades for AP course work would be credited to their provincial transcripts, what proportion of College Board assigned grades would be generated from course work or from AP exams, or whether universities valued AP credits. Given the number of questions asked by participants, it is clear that a successful online AP program would have to begin with getting accurate information about these policies and procedures to prospective students in order to give them the information they need to make appropriate enrollment decisions.

One participant voiced a singular but significant concern about the necessary prerequisite knowledge that would be required to successfully complete AP course work. He wanted to know "where they would base ... what everybody has to know to start the course"? This concern is often raised by prospective AP students who have come to the final stages of making an enrollment decision. Clear, concise course descriptions that are readily available to prospective students and that outline the commonalities of provincial and AP curricula would be a necessary component of a successful online AP program.

Question 3: Concerns About AP in an Online Learning Environment. The third question addressed in each focus group was: "Do you have any concerns about the idea of taking one or more AP courses through the Internet?" The six themes that emerged in this discussion are illustrated in Figure 12.

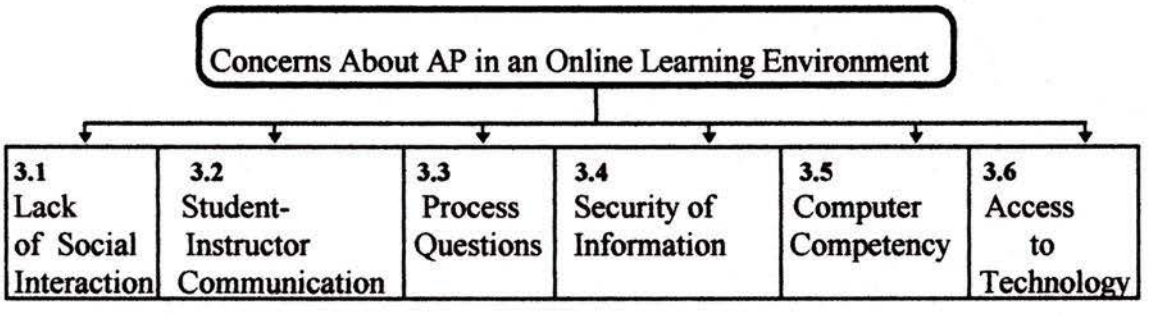

Figure 12

Concerns About AP in an Online Learning Environment

Concern about a possible lack of social interaction in an electronic learning environment was an issue raised by six participants and it sparked agreement among

several other participants. This concern was stated in general terms of needing "other people to thrive" academically and socially, as well as in more specific terms, such as, worries about the isolation from other students causing a negative effect on group work, worries about how to solicit peer help, and worries about the lack of opportunity to build interpersonal skills. Participants' focus on the need for collaborative elements in a virtual learning environment are highly consistent with current research. Gray (1998) reports that integrating collaborative elements enhances "achievement of learning objectives" (p. 187). Boverie, Nagel, McGee and Garcia (1998) assert the "degree of collaboration with peers toward learning" significantly correlates with learner satisfaction" (p.4). Gillani (1998) argues that interactive, collaborative components of Web-based instruction are the "most productive and interesting to the students" (p.199). Dabbagh and Schmitt (1998) conclude "fostering interaction and encouraging collaborative and independent work" utilize the capabilities of the Internet to enable instructional events that make distance education experiences worthwhile and meaningful (p. 109).

Participants concerns about isolation were expressed in terms of: perceived difficulties in getting "everybody's idea heard," in ensuring that "everyone feels included," and in important social cues being missed because of a lack of "body language." These concerns are substantiated in Kerka's (1996) research, which shows "the lack of nonverbal cues can hinder communication" (p.2). A strong sense of preference for classroom-based learning developed around comments, such as, "A classroom is an important way to learn"; and "A part of learning is to interact with teachers and students in ... a high-pressure setting." Perhaps participants lack of experience contributed to these concerns. Encouraging online learners to "work in large groups, small groups, and pairs, as well as to participate in 'off-task talk' are strategies that have been found to mediate learner concerns about a lack of social interaction in an electronic learning environment" (Clarke, p. 84). Therefore, it is likely that a successful online learning environment will need to include an off-task talk forum in order to allow students a social avenue through which to strengthen communication links with the peers with whom they will work.

As well as concern about the lack of social interaction with peers, participants also expressed a concern about the level of clarity of student-instructor communication in an electronic learning environment. Again, the absence of "face to face" or "person to person" communication was the source of this concern. The isolation of the instructor from the student was seen as an obstacle to receiving "that kind of reassurance" that students who are attempting challenging curricula often seek. Having "that kind of direct access to the teacher and to asking questions," being able to get "clarifications" were stated concerns that reflect Boverie, Nagel, McGee and Garcia's (1998) findings that "teacher immediacy contributes to student satisfaction and learning" (p. 3). Participants suggested that readily accessible access to the instructor via telephone would be their preferred mediation for this concern.

Process questions marked the discussions after this issue was raised. Participants asked questions about testing procedures, assignment submission, completion of and submission of lab work, as well as about the possibilities of multi-media and teleconferencing components to the program. Six of twelve focus group participants suggested that some form of audio and visual (both still and video) exchange of information would be helpful in the creation of a virtual learning community. These comments were supported by agreement from other participants. Should the technology for provision of the exchange of audio and visual information be economically feasible, then it would certainly add to the attractiveness of an online learning environment. Participant preferences for multi-media (audio and visual exchange of information) are supported by Perraton's (1987) assertion that "distance learning programmes which use a combination of media are likely to have a higher successful completion" (p.4).

Specific concerns were raised about science and language course procedures, as well as assignment schedules and deadlines. In contrast to earlier concerns about schedule flexibility, two participants raised concern about a perceived lack of deadlines or reminders from instructors about up-coming deadline dates. Further process concerns included: concern about time delays in student-instructor communication and concern about technology failures. These process concerns and questions reflect participants' lack of experience with electronic learning environments, as well as the fact they were

responding to a concept rather than a concrete product available to them for evaluation. Their concerns and questions serve the purpose of predicting the kinds of features and information prospective students would seek, should AP online become a reality.

Security of information questions were raised by three participants. These questions addressed the general security of assignment information, the use of passwords, and the possibility of theft of both course and assignment information. Again, these questions predict a possible need for information prospective online students may have.

Access to technology, both at school and at home, was discussed. Concerns about prospective students' access to technology included a worry about having to do repetitive work: having "to write it all up" and then having "to type it all out again" if home access to technology was limited. Concerns about time limitations to computer access in schools included both restricted lab hours and restricted teacher and supervisor time, which in turn, would limit access to school computer labs. While these concerns were voiced by three participants, the data collected in the quantitative section of this study do not suggest that these concerns are perceived as significant obstacles to online study. The mean score for reported access to technology: 6.63 of a possible score of 8 points, was higher than the mean score for perceived need for access to technology: 5.9 of a possible score of 8 points. However, the standard deviation scores reveal that some participants were concerned about current access (1.44) and perceived need for access (1.32). Therefore, some form of increased access to school-based technology may be required for some prospective online students.

Question 4: Specific Features in an Online Learning Environment. The fourth topic addressed in each focus group was: "Please comment on the specific technological features that you have identified as needed, helpful, and ideal for an Internet learning environment." The six themes which emerged in this discussion are illustrated in Figure 13.

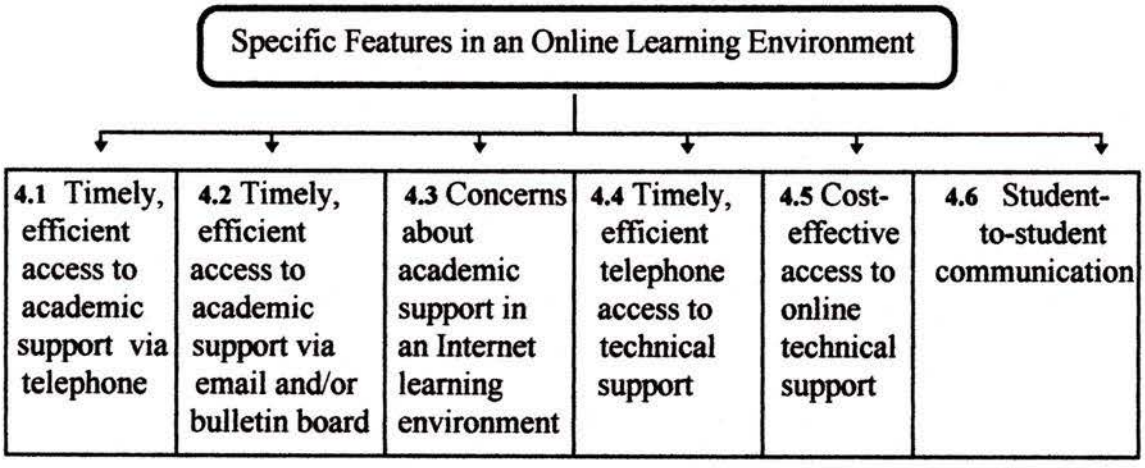

Figure 13

Specific Features in an Online Learning Environment

Timely, efficient access to academic support via telephone was the most highly agreed upon feature that participants identified as necessary in an online learning environment. Ten of the twelve focus group participants described this feature as necessary; a further four participants added written comments on the necessity of this feature. The reasons that participants stated for the necessity of this feature included: the need to have questions answered "right away," the need to clarify content concerns through "ongoing conversation," and the need to "have an actual discussion on different concepts." One participant added that the ability to "talk to the instructor while he is showing you over the Internet how to do the question" would be optimum. One participant expressed concern about the cost of long distance calls. Both of these suggestions were met with strong support among group members. Clearly telephone access to the instructor was identified as a "necessary," "essential," feature "in creating online courses" in the qualitative section of the study. This finding is supported by a rating of necessary by 34 percent and helpful by 54 percent of participants in the quantitative section of the study.

Timely, efficient access to academic support via email and /or bulletin board access to the instructor was also identified as important in response to the prompt for this section of the study. Nine of the twelve focus group participants identified this feature as "important," "helpful," "useful," or "necessary." The primary concern about this form of

communication with the instructor was a concern about time delays between sending or posting messages and receiving responses to those messages; however, it was generally agreed upon that "anyway you can get access to your instructor is going to be the best."

The most significant benefit participants identified as connected to online student-instructor communication was the perception that this form of communication would allow for feedback on preliminary or draft work on assignments. Again the results of the quantitative section of the study supported the focus group response to the value of this form of student-instructor communication: 55 percent of participants rated email access to the instructor as necessary and 21 percent rated this feature as helpful; 20 percent of participants rated bulletin board access to the instructor as necessary and 63 percent rated it as helpful. This accumulative evidence of student emphasis on the need for teacher immediacy reflects the findings of Bovierie, Nagel, McGee and Garcia (1998), Thomas, Carswell, Price and Petre (1998), and Perraton (1987). Since WebBoard software combines these features, this software or a comparable courseware solution is well-suited to meet a variety of student communication needs in an online learning environment.

Other concerns about accessing academic support in an online learning environment were closely connected to issues raised earlier in the focus group discussions. The first concern, that of there being an impersonal atmosphere in an online learning environment, can be connected to the concern about a lack of social interaction; however, it is also separated from that concern by participants' specific association of this impersonal atmosphere with academic support. Three participants expressed concern about "online instruction and teaching" as lacking "one-on-one" student-instructor communication because they felt that it would be difficult to emulate the "personal" quality of student-instructor communication that occurs in a classroom. They felt that " it would be hard for a lot of people to adapt" to a "virtual learning" model. Two other concerns about accessing academic support online were: 1) concern about students' typing speed and accuracy, and 2) concerns about class size effects on communication speed. Each of these concerns indicate that some students are neither comfortable with nor confident about their abilities to function successfully in an online

learning environment. However, the results of the quantitative section of this study indicate that this group of students is in the minority; 73 percent of participants did express interest in pursuing course work in an online learning environment.

Timely, efficient telephone access to technical support was identified as important by ten of the twelve focus group participants. Two sub-topics emerged within this discussion: 1) the need for reliable and easy-to-access technical support, and 2) concerns about the cost of this support. Participants from smaller communities expressed stronger concern about reliable Internet service and provided anecdotal support for their concerns. Experiences of losing Internet access for several days, even "weeks, at times" prompted their concerns. Pragmatically, several participants pointed out that if Internet service was unavailable, then online access to help would not be very useful. Participants also acknowledged that technical skill levels among academically strong students tend to vary widely; as a result, they predicted that some students would experience difficulty using online technical support features. A successful online learning environment needs to be designed to meet the needs of both novice and expert technology users. One way of ensuring that both sets of needs are met is to develop a two-tiered instructional design where key or necessary features are well-supported via both online and telephone-based help, and additional or optimal features for more expert users are supported primarily by online help (Khan, 1998, p. 64). Participant concerns about the reliability of local access to the Internet in geographically isolated communities may be addressed by the ongoing expansion of Provincial Learning Network services. Kerka (1996) identified the need for distance education managers to "plan for technical failures and ensure access to technical support" (p.4). A crisis anticipated is much less likely to occur.

Cost-effective access to online technical support was a specific issue raised by three participants. Concerns about the cost of technical support were connected to concerns about the overall cost of providing online AP instruction. Study participants made several suggestions for making online support cost-efficient, including: the provision of local help for hardware and connection software support and the provision of centralized technical support for courseware-specific problems, the publication of an

"*AP Internet for Dummies*" handbook, and the establishment of a *Frequently Asked Questions* site within the online learning environment.

Student-to-student communications options were discussed in each of the focus group sessions. These discussions were marked by comments on the need for off-task talk as forming the basis for an effective collaborative learning environment where task-related communications would be clearer and more time-efficient. Recent findings in queries into electronic learning communities have shown that learner responses to online communication vary: "some participants feel more intimidated about posting their thoughts to unseen classmates; others find the relative anonymity of the medium to be liberating" (Clarke, 1998, p. 81). Encouraging online learners to "work in large groups, small groups, and pairs, as well as to participate in "off-task talk" are strategies that have been found to mediate learner concerns about a lack of social interaction in an electronic learning environment (Clarke, p. 84). Provision of chat room space in an online learning environment can meet this need to establish social connections within a cohort of learners. Participant perception of the value of chat room space as a medium to support student-to-student communication received relatively strong ratings of 28 percent for necessary and 49 percent for helpful. Since WebBoard software incorporates this feature within its bulletin board design, WebBoard or a comparable courseware package, would be well-suited to meet the needs of prospective online students.

The high degree of overlap between participant perceptions of and current research on the academic, technical, and social support mechanisms required to make virtual learning experiences meaningful and worthwhile strongly suggests that a successful online AP program needs to be designed with the features which study participants have identified.

CHAPTER 5

Conclusions and Recommendations

Summary and Conclusions

The results of this study strongly suggest that there exists a significant demand for expanded AP course work opportunities from gifted and talented BC secondary students. Gifted and talented students in this province are highly motivated and are seeking the kind of challenges that AP curricula offer. While the 42 percent of students in registered in Grades 11 and 12 in BC public secondary schools already have access to either classroom-based AP instruction, or at least an AP advisor who can assist them in preparing for and registering for AP exams, 58 percent of Grades 11 and 12 attend schools that are not involved in the AP program. Therefore, gifted and talented students who happen to attend public schools where enrollment figures for Grades 11 and 12 are less than 500 pupils encounter a significant academic disadvantage.

Even those students who do attend schools large enough to support classroom-based AP course work are most often met with a limited number course selection options. Those students whose academic talents and interests do not match these limited course offerings are denied a viable option to challenge themselves in the areas where their talents lie. Further, significant variation exists in the level of learning support available to even those students who attend schools that are involved in the AP program.

AP course work is recognized as honours-level course work by university and college scholarship selection committees, and therefore, provides successful AP candidates with a distinct advantage over students who have successfully but exclusively completed provincial curricula and examinations. Since the cost of post-secondary education is necessarily increased for those students whose homes are in geographically isolated areas because they have no choice but to move away from home to pursue a post-secondary education, this disadvantage in scholarship competition has a particularly negative effect on their ability to pursue post-secondary studies.

The results of this study strongly suggest that sufficient interest in and demand for AP online course work exists in both rural and urban centers. Participants' responses to this study clearly indicate that a successful AP online program designed to meet the expectations of its users, developed through British Columbia's Open School, and delivered via the province's distance education centers is feasible.

Role of the Researcher

I have taught two Advanced Placement courses in a classroom setting, using electronic submission of draft course work as a supplementary learning support. My experience as an AP teacher may have biased my view in favour of the use of this curricula for gifted and talented students. The flexibility of being able to select only those subjects in which an individual is interested and capable, the challenge of undertaking post-secondary level study in a subject of choice, the increasing recognition of and rewards for achievement granted to successful AP candidates – each contribute to making the AP experience an excellent one for gifted and talented secondary students.

My experiences as a learner have been gained in both classroom-based and distance education models; the latter has allowed me a measure of pragmatic insight into emerging theories of distributed learning. I have completed four and a half years of post-secondary education in classroom-based settings, and the equivalent of two and a half years through a variety of distributed (distance) learning programs. The first year of my undergraduate work in the College of Arts, which was credited towards my Bachelor of Education degree; the final year of my undergraduate studies in the College of Arts, which was credited toward my Bachelor of Arts degree; as well as my first three graduate course credits, were all earned in distance learning programs. When I began my undergraduate studies through the University of Waterloo, the distance learning model included submission and return of assignments through Canada Post and a learning resource package of readings, audio-taped lectures, and textbooks. The graduate course work I completed through Boise State University involved a distributed learning model that included Online/Off-net conferencing software (an electronic system which connects the learner to a central conferencing program, but not to the Internet),

telephone access to both instructional and technical support, as well as online access to both instructional and technical support. The conferencing software allowed for one-to-one, small group, and full group communication among students. An off-task conference allowed for social interaction within each cohort.

My combined experiences of learning and teaching through both classroom-based and distributed learning models have shaped my somewhat biased view of what makes an ideal learning environment. I believe that the social interaction within a cohort of learners is richer when instruction is classroom-based. I believe that rich social interaction is a vital part of both the learning process and substantive intellectual development. However, I also recognize that when classroom-based instruction is not an option, distributed learning options become vital to learners. Advances in the development and the use of technology to create virtual learning communities hold significant promise for those learners who, for whatever reasons, do not have access to traditional classroom-based instruction in the subject areas of their choice.

Results and Recommendations

As a result of my research, I purpose nine recommendations for the development of an AP online program in British Columbia.

1. *Significant interest has been be shown to make the development an AP Online program feasible.* Study results suggest that gifted and talented BC secondary students believe in their abilities, have confidence in their motivational levels, and wish to pursue challenging goals. These students are interested in pursuing the challenge of AP course work.

2. *Information about the AP program be distributed to British Columbian secondary schools.* Study results suggest that the majority of current high-achieving British Columbian secondary students may have little awareness of or experience with the AP program. Lack of awareness of and experience with the AP program may negatively influence student decisions to seek AP credits; therefore, increasing student awareness of and knowledge about the AP program will likely have a positive influence on an online AP program's enrollment figures.

3. *Accurate information about Ministry of Education, College Board and university policies and procedures be made accessible to prospective students to ensure appropriate enrollment decisions; and clear, concise course descriptions should also be made readily available and should outline the commonalities of provincial and AP curricula.* Those students who do have more knowledge of AP credit policies expressed a higher value for more AP course work. It is likely that increasing knowledge of Ministry of Education, university, and college AP credit policies may increase student enrollment in AP courses.

4. *Lack of technical confidence or skill will not significantly influence enrollment.* Study results suggest that BC secondary students are fairly confident that they either have the technological knowledge to consider online course work or are confident that the technological knowledge to consider online course work is attainable.

5. *An AP Online program would redress existing inequities.* Schools with smaller enrollments cannot offer the range of options (specifically AP options) available in larger schools because lower enrollments restrict funding. An AP Online option would offer a redress for this inequity. The results of this study also show that among the group of BC students who write AP exams there is a wide range of difference in the amount of instructional preparation they receive; an AP Online option would offer a redress for this inequity as well.

6. *Course development should begin with selections from the eight most popular choices common to study participants and provincial AP exam statistics.* Eight of the top ten course selections made by study participants match eight of the top ten AP courses, in terms of number of exams written in British Columbia in 1998. If online AP courses are developed, beginning course development with selections from these eight courses is most likely going to be met with strong enrollment results. Participants' preferences for Psychology and Spanish Language may indicate either a variance particular to the participants involved in this study or an interest that is not being met by current course offerings in schools.

7. *Tuition should be subsidized either through targeting gifted and talented funds from the Ministry of Education or through a cost-sharing arrangement with schools in order to allow all interested students to pursue AP course work and to prevent inequities among schools.* Study results suggest that economic status data showed no correlation to the other shared qualities of the participants in this study. However, the economic status of gifted and talented students in British Columbia is likely to reduce the probable number of online AP enrollments by approximately half if no tuition subsidy can be arranged.

8. *Arrangements be made with schools to ensure AP Online students have sufficient access to computers.* Study results suggest that the majority of BC secondary students believe that they have adequate access to technology to pursue online studies; however, some concerns were raised that also suggest that arrangements would need to be made with schools to allow for increased use of computer lab time for prospective AP Online students.

9. *Specific recommendations for the development of a successful AP Online program include the following online learning features*: 1) the use of Web Board, or a comparable software package, for delivery of instruction; 2) timely, efficient access to academic support via telephone be provided, timely, efficient access to academic support via email and /or bulletin board access to the instructor; 3) a two-tiered instructional design where key or necessary features are well-supported via both online and telephone-based help, and additional or optimal features for more expert users are

supported primarily by online help; 4) provision of a print version of answers to frequently asked technical questions; 5) an off-task talk forum in order to allow students to a communication avenue through which to develop social ties with the peers with whom they will work; and 6) some flexibility in assignment scheduling.

Directions for Further Inquiry

The effectiveness of computer mediated communication has significantly improved throughout the past decade as a result of emerging information technologies (Bruce, 1998; Clarke, 1998; Romiszowski, 1993; Schwier, 1992). These developments in computer mediated communication have led to a vast array of educational applications, especially in the field of Web-based distributed learning (Barker & Dickson, 1996; Clarke, 1998; Corrent-Agostinho, Hedberg, & Lefoe, 1998; Dabbagh & Schmitt, 1998; Gillani, 1998; Gray, 1998; Jonasson, 1998; Kerka, 1996; Khan, 1998; Kowach & Schwier, 1997; Patel & Volk, 1997; Peck and York, 1998; Wiens & Gunter, 1998). However, while sophisticated courseware packages to support distributed learning have been rapidly developed and are being constantly up-dated, much less progress has been made in the area of Web-based pedagogy (Bannan-Ritland, Harvey, & Milheim, 1998; Firdyiwek, 1999). Web-based pedagogical research and the testing of emerging models will very like generate considerable interest as we enter the new millennium.

REFERENCES

Bannan-Ritland, B. Harvey, D. M. & Milheim, W. D. (1998). A general framework for the development of web-based instruction. Educational Media International, 35 (2), 77-81.

Barker, B. O. & Dickson, M. W. (1996). Distance Learning technologies in K-12 schools: Past, present, and future practice. Techtrends, 41 (6), 19-22.

Berger, S. (1990). College planning for gifted and talented youths. Reston, VA: The ERIC Clearinghouse on Disabilities and gifted Education. (ERIC EC Digest No. E490). [On-line]. Available: http://www.cec.spred.org/digests/e490.htm

Boverie, P., Nagel, L., McGee, M. & Garcia, S. (1998). Predictors of satisfaction for distance learners: A study of variable conditions. Sigcue Outlook, 26 (2), 2-7.

British Columbia Data and Transcripts Branch (1997). Online schools book. Victoria: Ministry of Education. [On-line]. Available: http://www.bced.gov.bc.ca/schoolbook/

British Columbia Data and Transcripts Branch (1998). Report 1556B. Victoria: Ministry of Education. [On-line]. Available: http://www.bced.gov.bc.ca/k12datareports/standardreports/frames/98sldab/1556b.txt

Bruce, B. (1998). Dewey and technology. Journal of Adolescent & Adult Literacy, 42 (3), 222-226.

Buescher, T. M. & Higham, S. (1990). Helping adolescents adjust to giftedness. Reston, VA: The ERIC Clearinghouse on Disabilities and gifted Education. (ERIC EC Digest No. E489). [On-line]. Available: http://www.cec.spred.org/digests/e489.htm

Carlyle, T. (1841). On history. As cited in The Oxford Dictionary of Quotations, (2nd ed.). London, Oxford University Press.

Clarke, D. K. (1998). "Through a glass, darkly": Exploring, student community in electronic learning environments. Unpublished master's thesis, University of Victoria, Victoria, British Columbia, Canada.

Corrent-Agostinho, S., Hedberg, J. & Lefoe, G. (1998). Constructing problems in a web-based learning environment. Educational Media International, 35 (3), 173-180.

Creswell, J. W. (1997). Qualitative inquiry and research design: Choosing among the five traditions. London: Sage.

Dabbagh, N. H.& Schmitt, J. (1998). Redesigning instruction through web-based course authoring tools. Educational Media International, 35 (3), 106-110.

Daniel, N.& Cox, J. (1988). Meeting the needs of able learners through flexible pacing. Reston, VA: The ERIC Clearinghouse on Disabilities and Gifted Education. (ERIC EC Digest No. E464). [On-line]. Available: http://www.cec.sped.org/digests/e464.htm

Della-Dora, D. (1976). Innovations in education: Curricula for the gifted and talented (pp. 10-14). In Jackson, D. M. (Ed.) Readings in Curriculum Development for the Gifted. Guilford, CT: Special Learning Corporation.

Dimaraki, E.V., Black, J. B. & Brown, M.K. (1998). What pedagogy for the age of abundant information? Lesson from archaeotype. Educational Media International, 35, (3), 181-185.

Firdyiwek, Y. (1999). Web-based courseware tools: Where is the pedagogy? Educational Technology, 39 (1), 29-34.

Fox, D. (1986). Teaching English to the gifted student. ERIC Digest. (ERIC Document Reproduction Service No. ED270782). [On-line]. Available: http://ericae.net./db/edo/ED270782.htm

Gillani, B. (1998). The web as a delivery medium to enhance instruction. Educational Media International, 35 (3), 197-201.

Gorden, G. G. & Regan, C. (1979). Gifted education – Are you ready for the challenge? (pp.4-9). In Jackson, D. M. (Ed.) Readings in curriculum development for the gifted. Guilford, CT: Special Learning Corporation.

Government of British Columbia. (1998). Ministry of education. In Education and training. [On-line]. Available: http://www.gov.bc.ca/edtraint.html

Gray, S. (1998). Maintaining academic integrity in web-based instruction. Educational Media International, 35 (3), 186-188.

International Baccalaureate Organisation. (1999). IBO. [On-line]. Available: http://194.82.135.102/diploma.htm

Janesick, V. J. (1998). Sketching exercises for qualitative researchers. Thousand Oaks, CA: Sage.

Jonasson, J. (1998). The Internet- the educational medium of today. Educational Media International, 34 (2), 88-93.

Kerka, S. (1996). Distance learning, the internet, and the world wide web. Columbus, OH: Clearinghouse on Adult, Career, and Vocational Education. (ERIC Document Reproduction Service No. ED395214)

Khan, B. H. (1998). Web-based instruction (WBI): An introduction. Educational Media International, 35 (3), pp. 63-71.

Kowach E., & Schwier R. (1997). Building learning communities with technology. Saskatoon, SK: National Congress on Rural Education. (ERIC Document Reproduction Service No. ED405487)

Litchfield, B.C. (1993). Design factors in multimedia environments: Research findings and implications for instructional design. Paper presented at the Annual General Meeting of the American Educational Research Association, Atlanta, GA. (ERIC Document Reproduction Service No. ED363268)

Nguyen, T. (1997). International baccalaureate enjoys increasing popularity. In California International Baccalaureate Organization. [Online]. Available: http://sjha.sjusd.k12.ca.us/COBO/article1.html

Okey, J.R. & Jones, M.G. (1990). Learner decisions and information requirements in computer-based instruction. Paper presented at the 32nd International Conference of the Association for the Development of Computer-Based Systems, San Diego, CA. (ERIC Document Reproduction Service No. ED331492)

Parke, B.N. (1992). Challenging gifted and talented students in the regular classroom. (Report # E513). Reston, VA: Council for Exceptional Children. (ERIC Document Reproduction Service No. ED352774)

Patel, M. D. & Volk, E T. (1997). Designing for the web: Integrated independent and collaborative learning on the Internet. Competition-Connection-Collaboration. Proceedings, 13th Annual Conference in Distance Teaching and Learning, Madison: University of Wisconsin, 239-245. (ERIC Document Reproduction Service No. ED413870)

Peck, S. B. & York, J. (1998). Why conference on the web? In Conferencing with WebBoard, (pp. 3-15). Sebastpol, CA: O'Reilly & Associates.

Perraton, H. (1987). The roles of theory and generalisation in practice of distance education. Hagen, Germany: Zentrales Institut für Fernstudienforschung. (ERIC Document Reproduction Service No. CE049375)

Province of British Columbia, Ministry of Education. (1995). Special Educational Policy. [Online]. Available: http://www.bced.gov.bc.ca/policy/95/09.htm

Province of British Columbia, Ministry of Education. (1998a). AP and IB Courses: Policies and Procedures. [On-line]
Available: http://www.bced.gov.bc.ca/policy/95/14.htm

Province of British Columbia, Ministry of Education. (1998b). Special programs: Special education: Gifted education - A resource guide for teachers. [On-line].
Available: http://www.bced.gov.bc.ca/specialed/gifted/programming.htm

Province of British Columbia, Ministry of Education, Skills and Training. (1998a). PLNet: Linking lifelong learners. [Brochure]. Coombes, K. Author.

Province of British Columbia, Ministry of Education, Skills and Training. (1998b). Distance Education: K-12 Guidebook. Burnaby, BC: Open Learning Agency.

Romiszowski, A. (1993). Telecommunications and distance education. ERIC Digest. (ERIC Document Reproduction Service No. ED358841). [On-line].
Available: http://ericae.net./db/edo/ED358841.htm

Ross, J. & Schulz, R. (1999). Can computer-aided instruction accommodate all learners equally? British Journal of Educational Technology, 30 (1), 5-24.

Schiffman, S. S. (1995). Instructional systems design: Five views of the field. In G. J. Anglin (Ed.), Instructional technology: Past, present, and future (pp. 131-144). Englewood, CO: Libraries Unlimited.

Schwier, R.A. (1992). A taxonomy of interaction for instructional media. Paper presented at the Annual Conference of the Association for Media and Technology in Education in Canada, Vancouver, BC.

Sellin, D.F. & Birch, J.W. (1980). Background: Perspectives and prospects. In Educating gifted and Talented Learners. (pp.3-34). Rockville, MD: Aspen Systems Corporation.

Snee, B. (1998). IB vs AP:one school's perspective. In California International Baccalaureate Organization. [Online]. Available:
http://sjha.sjusd.k12.ca.us/COBO/article2.html

Statistics Canada. (1998). Statistical profile: Income and work statistics for Keremeos (village), British Columbia. In Census 96. [Online]. Available:
http:ww2.statcan.ca/english/profil/Det...m?SGC=5907009&a=&LANG=e&CSD NAME=Keremeos

The College Board (1998a). Resource Package: Canada 1998. Kelowna: AP Canada.

The College Board (1998b). 1997 AP Canadian and Global Summary Reports. New York: The College Board.

Thomas, P. Carswell, L. Price, B. & Petre, M.(1998). A holistic approach to supporting distance learning using the Internet: Transformation, not translation. British Journal of Educational Technology, 29 (2), 149-161.

Tuckman, B. W. (1994). Conducting educational research (4th ed.). Orlando, FL: Harcourt Brace College.

Wiens, G. & Gunter, G. A. (1998). Delivering effective instruction via the web. Educational Media International, 35 (3), 95-99.

Wilson, B.G. (1999). Adoption of learning technologies: Toward new frameworks for understanding the link between design and use. Educational Technology, 39 (1), 12-16.

APPENDICES

Table of Contents

University of Victoria
Human Research Ethics Committee

CERTIFICATE OF APPROVAL

Principal Investigators	Department/School	Supervisor
Gale Parchoma **Graduate Student**	**CMFD**	**Dr. G. Potter**

Co-investigator(s):
N/A

Title: Advanced Placement Online Feasibility Study

Project No.	Start Date	End Date	Approval Date
015-99	**29 Jan 99**	**31 Dec 99**	**29 Jan 1999**

Certification

This is to certify that the University of Victoria Ethics Review Committee on Research and Other Activities Involving Human Subjects has examined the research proposal and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Subjects.

J. Howard Brunt,
Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the procedures. Extensions/minor amendments may be granted upon receipt of "Request for Continuing Review or Amendment of an Approved Project" form.

Office of Vice President Research
Room 424, Business & Economics Building
P.O. Box 1700,
Victoria, BC V8W 2Y2

Tel: (250)721-7968
Fax: (250)721-8960
Email: lalleman@uvic.ca

Questionnaire: Part I

The following pre-presentation questions are designed to gather what you know about Advanced Placement Courses before you attend the presentation. There are no right or wrong answers, only answers that describe your experience.

Advanced Placement courses are referred to as AP courses in this questionnaire.
Please answer the following questions by circling a (Y) for yes or an (N) for no.

A. Background Information

	YES	NO
1. I am aware of one or more AP courses currently offered in my school.	Y	N
2. I am aware of one or more AP courses being offered at my school in the past five years.	Y	N
3. I have enrolled in an AP course at my school.	Y	N
4. I have written an AP exam.	Y	N

B. Awareness About AP Courses

Please answer the following questions by circling one of the following four options: (1) strongly agree, (2) agree, (3) don't know, (4) disagree, or (5) strongly disagree.

	Strongly Agree	Agree	Do Not Know	Disagree	Strongly Disagree
1. I know about the AP program.	SA	A	N/A	D	SD
2. I believe that the Ministry of Education accepts some AP credits as equivalent to provincial credits.	SA	A	N/A	D	SD
3. I believe that BC universities, as well as most Canadian universities and colleges, accept AP credits as equivalent to provincial course credits.	SA	A	N/A	D	SD
4. I believe that BC universities, as well as most Canadian universities and colleges, have policies that regulate accepting AP courses for university credits.	SA	A	N/A	D	SD
5. I believe that attaining AP credits can improve my chances for receiving scholarships to colleges and universities.	SA	A	N/A	D	SD
6. I believe that students can take one course, then write both the provincial examination and the AP examination in that subject.	SA	A	N/A	D	SD
7. I believe most students who take on AP course work find it challenging.	SA	A	N/A	D	SD
8. I believe that taking AP course work helps prepare high school students for college or university.	SA	A	N/A	D	SD

Please stop here.
A presentation will be made before you complete the rest of the questions.
Thank-you.

C. Post-Presentation Questions

Please answer the following questions by circling one of the following four options: (1) strongly agree, (2) agree, (3) disagree, or (4) strongly disagree.

Please answer either question 6 or question 7, but not both.

I. Comfort Levels	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
1. I believe I am a highly motivated student.	**SA**	**A**	**D**	**SD**
2. I like to be academically challenged.	**SA**	**A**	**D**	**SD**
3. I feel capable of taking an AP course in a classroom in my school.	**SA**	**A**	**D**	**SD**
4. I am interested in taking one AP course.	**SA**	**A**	**D**	**SD**
5. I am interested in taking more than one AP course.	**SA**	**A**	**D**	**SD**
6. I believe I have the technical skills needed to take an AP course in an Internet setting.	**SA**	**A**	**D**	**SD**
7. I believe I could learn the technical skills to take an AP course in an Internet setting.	**SA**	**A**	**D**	**SD**
8. I would be interested in taking one AP course in an Internet setting.	**SA**	**A**	**D**	**SD**
9. I would be interested in taking more than one AP course in an Internet setting.	**SA**	**A**	**D**	**SD**

If you have selected (SA) or (A) as responses to either questions 8 or 9, please complete the rest of the questionnaire. Thank-you.

D. Courses That Interest You

Please browse through the brief descriptions of AP courses.

Select and priorize (identify the most interesting course with the #1, the next most interesting with #2, and the third most interesting with #3).

Select only three courses.

____ Art History
____ Art - Drawing
____ Art - General
____ Biology
____ Calculus AB
____ Calculus BC
____ Chemistry
____ Computer Science - A
____ Computer Science - AB
____ Economics - Micro
____ Economics - Macro
____ English Language and Composition
____ English Literature and Composition
____ European History
____ French Language
____ French Literature
____ German Language
____ Government & Politics - US
____ Government & Politics - Comp.
____ International English Language
____ Latin - Vergil
____ Latin - Literature
____ Music Theory
____ Physics B
____ Physics C - Mech.
____ Physics C - E&M
____ Psychology
____ Spanish Language
____ Spanish Literature
____ Statistics
____ US History

E. Economic Considerations

The current estimate for the cost of an online course is approximately $600. Writing the exam costs about $140.

Please answer the following questions by circling one of the following four options: (1) strongly agree, (2) agree, (3) disagree, or (4) strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I would be able to pay for the course and the exam.	SA	A	D	SD
2. I would be able to pay for the course only.	SA	A	D	SD
3. I would be able to pay for the exam only.	SA	A	D	SD
3. I would need to talk to my parents about these costs.	SA	A	D	SD
4. I would be able to take the course and write the exam only if I could get some financial help through the school system.	SA	A	D	SD
5. I would be able to take the course and write the exam only if the school system covered all of the costs.	SA	A	D	SD

F. Access to Technology

1. I believe I could get access to a computer connected to the Internet at my school.	SA	A	D	SD
2. I believe I would have access to a computer connected to the Internet at home.	SA	A	D	SD
3. I believe I would need access to a computer connected to the Internet both at school and at home in order to successfully complete an AP course through the Internet.	SA	A	D	SD
4. I believe I could be successful in completing an AP course through the Internet with access to at computer at school only.	SA	A	D	SD

G. Technological Support in an Internet Learning Environment

Please indicate which technological features in an Internet learning environment would be:
(**N**) necessary - needed to make the program worthwhile,
(**H**) helpful - would make the program more attractive, and
(**I**) ideal - would make the program very attractive.
Please score each item only once. Thank-you.

	Necessary	Helpful	Ideal
1. telephone access to the instructor	**N**	**H**	**I**
2. telephone access to technical support	**N**	**H**	**I**
3. online access to technical support	**N**	**H**	**I**
4. email access to the instructor	**N**	**H**	**I**
5. email access to other students	**N**	**H**	**I**
6. bulletin board access to the instructor	**N**	**H**	**I**
7. bulletin board access to other students	**N**	**H**	**I**
8. chat line access to the instructor	**N**	**H**	**I**
9. chat line access to other students	**N**	**H**	**I**

Focus Group Questions

The following questions are meant to focus a small group discussion of some of the ideas you have been responding to in the questionnaire. Please feel free to make or withhold comments on each of these questions. At the close of this discussion, there will be time for you to comment about issues that are not raised in the questions. Thank-you.

1. Do you feel that taking AP courses would benefit you? Why or Why not?
2. Do you have any concerns about the idea of taking one or more AP courses?
3. Do you have any questions or concerns about the idea of taking one or more AP courses through the Internet?
4. Please comment on the specific technological features you have identified as needed, helpful, and ideal for an Internet learning environment.
5. What are you closing thoughts on taking AP courses through the Internet?
6. What are your closing thoughts about participating in this study?

Quantitative Data Analysis Scales

F.vi.1 DATA ROSTER FOR QUESTIONNAIRE #1

AWARENESS (Value scaled by accuracy of information provided)

	NO	YES
Q.1	0	1
Q.2	0	1

EXPERIENCE (Value scaled by amount of experience)

	NO	YES
Q.3	0	1
Q.4	0	1

F.vi.1.a SCALE FOR QUESTIONNAIRE #2

A. CONFIDENCE IN KNOWLEDGE (Value scaled by response)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DO NOT KNOW
Q.1	4	3	2	1	0

B. ACCURACY OF KNOLWEDGE ABOUT CURRENT POLICIES
(Value scaled by accuracy of response)

	STRONGLY AGREE	AGREE	DO NOT KNOW	DISAGREE	STRONGLY DISAGREE
Q.2	4	3	0	0	0
Q.3	4	3	0	0	0
Q.4	4	3	0	0	0
Q.5	4	3	0	0	0
Q.6	4	3	0	2	1

C. BELIEF THAT AP COURSEWORK IS VALUABLE

	STRONGLY AGREE	AGREE	DO NOT KNOW	DISAGREE	STRONGLY DISAGREE
Q.7	4	3	0	2	1
Q.8	4	3	0	2	1

DATA SCALE FOR QUESTIONNAIRE #3

F.vi.1.d SELF-EFFICACY (Value scaled by response)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.1	4	3	2	1
Q.2	4	3	2	1
Q.3	4	3	2	1

F. vi.1.e STATED INTERST IN AP COURSEWORK
(Value scaled by positive response)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.4	4	3	2	1
Q.5	4	3	2	1

F.vi.1.f CONFIDENCE IN TECHNICAL SKILLS
(Value scaled by positive response)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.5	4	3	2	1
Q.6	4	3	2	1

F.vi.1.g STATED INTERST IN AP COURSEWORK ONLINE
(Value scaled by positive response)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.7	4	3	2	1
Q.8	4	3	2	1

F.vi.2 DATA SCALE FOR QUESTIONNAIRE #4
COURSE PREFERENCES

FIRST CHOICE	SECOND CHOICE	THIRD CHOICE	*SELECTED, BUT UNRATED SELECTIONS
3	2	1	2

*This is a cautionary measure designed to account for responses that select but do not priorize courses.

F.v.3 DATA ROSTER FOR QUESTIONNIARE #5: ECONOMIC CONSIDERATIONS
(Value scaled by perceived ability to pay)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.1	4	3	2	1
Q.2	1	2	3	4
Q.3	1	2	3	4
Q.4	0	0	0	0
Q.5	1	2	3	4
Q.6	0	1	2	3

STRONGEST ECONOMIC STANCE
19

4
WEAKEST ECONOMIC STANCE

F.vi.3.b DATA SCALE FOR QUESTIONNIARE #5: ACCESS TO TECHNOLOGY

ACCESS TO TECHNOLOGY (Value scaled by positive perception of access)

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Q.1	4	3	2	1
Q.2	4	3	2	1

BELIEFS ABOUT NEED FOR ACCESS TO TECHNOLGY
(Value scaled by perception of level of access needed)

Q.3	4	3	2	1
Q.4	1	2	3	4

				School Enrollment	
School	Grade 11's	Grade 12's	Total	With AP Candidates	No AP Candidates
	1998	1998	1998	in 1998	in 1998
A L Fortune	102	99	201		201
Abbotsford	390	416	806		806
Agassiz	81	65	146		146
Alberni District	414	437	851	851	
Aldergrove	234	164	398	398	
Alpha	243	209	452	452	
Anne Stevenson	103		103		103
Argyle	280	254	534	534	
Ashcroft	78	52	130		130
Atlin	4	7	11		11
Babine	7	8	15		15
Ballenas	231	195	426		426
Bamfield Community	6	14	20		20
Barriere	55	47	102		102
Belmont	604	381	985		985
Big Bar	1	3	4		4
Boston Bar	9	12	21		21
Boundary	46	42	88		88
Britannica	174	160	334		334
Brocklehurst	179	127	306		306
Brooks	132	111	243		243
Brookswood	271	207	478	478	
Burnaby Central	330	560	890		890
Burnaby North	517	492	1009	1009	
Burnaby South	670	538	1208	1208	
Caledonia	296	328	624		624
Calrence Fulton	228	191	419		419
Cambie	291	278	569	569	
Captain Meares	8	13	21		21
Cariboo Hill	305	226	531	531	
Carihi	292	338	630		630
Carson Graham	373	358	731		731
Cedar Valley	30	50	80		80
Centennial	784	749	1533	1533	
Charles Bloom	135	125	260		260
Charles E London	227	335	562	562	
Charles Hays	117	110	227		227
Chase	86	73	159		159
Chatelech	157	109	266	266	
Chemainus	107	72	179		179
Chetwynd	114	77	191		191
Chilliwack	410	362	772	772	
City Center	1	50	51		51
Claremont	247	259	506	506	
Clearwater	87	70	157		157
College Heights	212	176	388	388	
Columneetza	226	381	607	607	
Correlieu	226	144	370		370
Cowichan	392	374	766	766	
Cowichan Valley	55	7	62		62
Crawford Bay	15	14	29		29

D P Todd	124	110	234		234
D W Poppy	216	225	441	441	
David Stoddart	19	27	46		46
David Thompson RM	152	119	271		271
David Thompson VD	339	313	652	652	
Dease Lake	9	13	22		22
Delta	290	245	535	535	
Denetia	4	7	11		11
Dover Bay	353	301	654	654	
Duchess Park	186	181	367	367	
Eagle River	52	58	110	110	
Earl Marriott	316	251	567	567	
Edward Milne	156	162	318	318	
Eke Me-Xi	3	2	5		5
Elgin Park	219	240	459	459	
Elkford	51	54	105		105
Elpinstone	166	134	300		300
Enver Creek	253	214	467		467
Eric Hamber	366	383	749	749	
Esquimalt	192	196	388	388	
Fernie	104	125	229		229
Fleetwood Park	261	308	569	569	
Fort Nelson	96	73	169		169
Fort St. James	84	54	138	138	
Frances Kelsey	212	107	319		319
Frank Hurt	217	177	394	394	
Fraser Lake	71	47	118	118	
Gariabaldi	220	179	399	399	
George Elliot	143	150	293		293
George M Dawson	28	27	55		55
George Pringle	213	181	394	394	
Georges P Vanier	520	576	1096	1096	
Gladstone	292	204	496	496	
Gleneagle	456	385	841		841
Gold River	34	36	70		70
Golden	104	121	225	225	
Grand Forks	160	125	285	285	
Grassy Plains	6	6	12		12
Guilford Park	286	215	501	501	
Gulf Islands	159	148	307	307	
H D Stafford	175	138	313		313
Handsworth	270	251	521	521	
Harley Bay	11	11	22		22
Hatzic	155	170	325		325
Hazelton	104	94	198		198
Heritage Park	143	99	242	242	
Highland	264	221	485		485
Hope	103	86	189		189
Houston	92	79	171		171
Howe Sound	229	201	430		430
Hudson's Hope	14	16	30		30
Hugh Boyd	258	233	491	491	
Hugh McRoberts	220	209	429	429	
J N Burnett	267	258	525	525	

J. Lloyd Crowe	234	219	453		453
J. V. Humphries	34	41	75		75
John Barsby	219	197	416		416
John Oliver	323	233	556	556	
John Peterson	133	126	259		259
Johnston Heights	424	353	777	777	
Kalamalka	130	152	282		282
Kamloops	187	164	351	351	
Kelly Lake	1	0	1		1
Kelly Road	274	221	495	495	
Kelowna	507	347	854	854	
Killarney	420	368	788	788	
King George	106	107	213		213
Kitimat City	19	9	28		28
Kitsilano	291	287	578	578	
Kitwanga	4	6	10		10
KLO	164	133	297		297
Kumsheen	34	25	59		59
Kwalikum	245	136	381	381	
Kyoquot	11	3	14		14
L A Matheson	254	178	432		432
L.V. Rogers	225	247	472	472	
Lach Klan	19	6	25		25
Ladysmith	159	128	287		287
Lake Cowichan	94	76	170		170
Lakes District	121	105	226		226
Lambrick Park	180	161	341	341	
Langley	235	131	366	366	
Langley Fine Arts	100	68	168		168
Len Shepard	22	10	32		32
Lillooet	85	83	168		168
Logan Lake	37	34	71		71
Lord Byng	230	239	469	469	
Lord Tweedsmuir	388	341	729	729	
Lucerne	38	24	62		62
Mackenzie	98	123	221		221
Magee	233	198	431	431	
Maple Ridge	310	315	625	625	
Matthew McNair	230	289	519	519	
Max Cameron	140	120	260	260	
McBride	45	26	71		71
Merritt	176	164	340	340	
Mission	178	124	302	302	
Mission Mountain	7	2	9		9
Mount Baker	399	385	784		784
Mount Boucherie	325	179	504	504	
Mount Douglas	416	456	872	872	
Mount Elizabeth	219	188	407	407	
Mount Sentinel	75	70	145		145
Mountain	149	120	269		269
Nakusp	52	47	99		99
Nanaimo District	269	257	526	526	
Nechako Valley	143	133	276		276
New Westminster	487	329	816		816

Nisga'a	41	36	77		77
Norkham	209	196	405		405
North Delta	697	582	1279		1279
North Island	110	107	217		217
North Peace	426	344	770		770
North Surrey	328	358	686	686	
Oak Bay	315	224	539	539	
Okanagan Mission	115	149	264		264
Osborn	1	0	1		1
Osoyoos	65	65	130		130
Parkland	227	169	396	396	
Pender Harbour	36	27	63		63
Pender Islands	6	2	8		8
Penticton	602	460	1062		1062
Peter Skene Ogden	237	194	431		431
Pinetree	442	341	783		783
Pitt Meadows	217	217	434	434	
Pleasant Valley	187	118	305	305	
Point Grey	271	273	544	544	
Port Hardy	112	106	218		218
Port Moody	334	471	805	805	
Presatou	17	11	28		28
Prince Charles	120	127	247	247	
Prince George	601	554	1155		1155
Prince of Wales	277	282	559	559	
Prince Rupert	102	133	235	235	
Princess Margaret	310	177	487	487	
Princeton	64	45	109		109
Queen Charlotte	47	54	101		101
Queen Elizabeth	488	559	1047	1047	
Quesnel	223	243	466		466
R C Palmer	340	232	572	572	
Revelstoke	117	124	241		241
Reynolds	196	195	391		391
Richmond	303	337	640		640
Rick Hansen	266	245	511	511	
Riverside	409	320	729	729	
Robert Bateman	188	183	371	371	
Rossland	90	91	181		181
Rutland	271	428	699	699	
Sa-hali	180	140	320		320
Salmo	35	44	79		79
Salmon Arm	409	330	739	739	
Sardis	451	379	830	830	
Seaquam	266	244	510	510	
Selkirk	143	137	280		280
Semaihmoo	320	288	608		608
Sentinel	235	227	462	462	
Seycove	107	100	207	207	
Similkameen	39	45	84		84
Sir Alexander Macken	32	19	51		51
Sir Charles Tupper	243	219	462	462	
Sir Winston Churhill	433	421	854	854	
Smithers	212	214	426		426

South Peace	300	236	536		536
South Delta	272	273	545	545	
Southern Okanagan	142	165	307		307
Sparwood	65	62	127		127
Spectrum	327	400	727		727
Spence's Bridge	1	0	1		1
Springvalley	208	230	438		438
Stanley Humphries	221	171	392	392	
Star Lake	17	7	24		24
Stelly's	272	269	541		541
Steveston	246	389	635	635	
Stewart	12	11	23		23
Summerland	195	133	328		328
Sutherland	278	261	539		539
Tahltan	5	4	9		9
Tamanawis	337	293	630		630
Templeton	237	185	422	422	
Terry Fox	349	321	670	670	
Thomas Haney	198	148	346	346	
Timberline	358	349	707	707	
Toad River	3	1	4		4
Tumbler Ridge	60	49	109		109
Ucluelet	44	39	83		83
University Hill	118	80	198	198	
Valemont	35	27	62		62
Valleyview	148	116	264		264
Vancouver Technical	342	315	657	657	
Vernon	230	210	440	440	
Victoria High	496	396	892	892	
W J Mouat	252	234	486		486
W L Seaton	228	219	447		447
Walnut Grove	338	280	618	618	
Wellington	194	208	402		402
West Vancouver	437	446	883		883
Westsyde	202	134	336	336	
Westview	189	171	360		360
Whistler	67	115	182		182
Williams Lake	153		153		153
Windermere	251	223	474	474	
Windsor	224	209	433		433
Woodlands	148	139	287		287
Yale	249	215	464	464	
Fr. Ed. Kelowna	4	5	9	9	
Fr. Ed.Sardis	4	6	10	10	
Fr. Ed.W J Mouat	4	9	13		13
Fr. Ed.North Delta	6	5	11		11
Fr. Ed. Kitsilano	21	10	31	31	
Fr. Ed.Centennial	3	6	9	9	
Fr. Ed.Handsworth	10	12	22	22	
Fr. Ed.Brooks	5	11	16		16
Fr. Ed. Duchess Park	18	19	37	37	
Fr. Ed.L'ecole Victor I	16	13	29		29
Fr. Ed. Nanaimo Dist.	4	6	10	10	
Fr. Ed.Ballenas	9	8	17		17

Fr. Ed. Highland	1	1	2	
Fr. Ed.Mission	2	4	6	6
	Grade 11	Grade 12	All Gr. 11& 12	AP Schools
Totals	50984	46331	97315	56903
Count	255		255	107
Average Enrollment (W/O Fr.Ed.)			381.627451	531.8037383
Note:	Special	Ioco	Career Tech.Connect	Electronic Ed.
School Programs with	Street	Outreach	Dev. Center	Cooperative Ed.
these designations were	Bussing	Program	Virtual	Center
not included	Storefront	Stretch	Opportunity Network	
	Aternate	Independent		
The reason they were excluded is that it is difficult to determine if learners who would not				
match the purposes of this study make up a significant part of the enrollment.				
http://www.bced.gov.bc.ca/k12datareports/standardreports/frames/98sldtab/1555b.txt				

Data Rosters

Participant Code	Awareness Level /2	Experience Level /2	Total /4
OS-S1-1	0	0	0
OS-S1-2	1	0	1
OS-S1-3	1	0	1
OS-S1-4	0	0	0
OS-S1-5	0	0	0
OS-S1-6	0	0	0
OS-S1-7	0	0	0
OS-S1-8	0	0	0
OS-S1-9	0	0	0
OS-S1-10	1	0	1
OS-S1-11	0	0	0
OS-S1-12	0	0	0
OS-S2-1	0	1	1
OS-S2-2	1	0	1
OS-S2-3	2	0	2
OS-S2-4	0	0	0
OS-S2-5	2	0	2
OS-S2-6	0	0	0
OS-S2-7	0	0	0
OS-S2-8	2	0	2
OS-S2-9	1	1	2
OS-S2-10	1	0	1
OS-S2-11	2	0	2
OS-S2-12	1	0	1
SD-S1-1	2	0	2
SD-S1-2	2	0	2
SD-S1-3	2	0	2
SD-S1-4	2	0	2
SD-S1-5	3	0	3
SD-S1-6	2	0	2
SD-S1-7	3	0	3
SD-S1-8	3	0	3
SD-S1-10	2	0	2
SD-S1-11	2	0	2
SD-S1-12	3	0	3
SD-S1-13	0	0	0
SD-S1-14	2	0	2
SD-S1-15	2	0	2
SD-S1-16	3	0	3
SD-S1-17	3	0	3
SD-S1-18	3	0	3
SD-S1-19	3	0	3
SD-S1-20	3	0	3
SD-S1-21	3	0	3
SD-S1-22	1	0	1
GV-S1-1	2	1	3
GV-S1-2	1	1	2
GV-S1-3	2	2	4
GV-S1-4	1	2	3
GV-S1-5	2	2	4
NO-S1-1	2	0	2
NO-S1-2	1	0	1
NO-S1-3	2	0	2

NO-S1-4	2	0	2
NO-S1-6	2	0	2
NO-S1-7	2	0	2
NO-S1-8	2	0	2
NO-S1-9	2	0	2
NO-S1-10	1	0	1
NO-S1-11	2	0	2
NO-S1-12	2	0	2
NO-S1-13	2	0	2
NO-S1-14	0	0	0
NO-S1-15	2	0	2
PG-S1-1	0	0	0
PG-S1-2	0	0	0
PG-S1-3	0	0	0
PG-S1-4	0	0	0
PG-S1-5	0	0	0
PG-S1-6	0	0	0
PG-S1-7	0	0	0
PG-S1-8	0	0	0
PG-S1-9	0	0	0
PG-S1-10	0	0	0
PG-S1-12	0	0	0
PG-S1-13	0	0	0
PG-S2-1	2	0	2
PG-S2-2	2	0	2
PG-S2-3	1	0	1
PG-S2-4	2	0	2
PG-S2-5	3	0	3
PG-S2-6	3	0	3
PG-S2-7	2	0	2
PG-S2-8	3	0	3
PG-S2-9	3	0	3
PG-S2-10	3	0	3
PG-S2-11	2	0	2
PG-S2-12	2	0	2
PG-S2-13	3	0	3
PG-S2-14	2	0	2
PG-S2-15	0	0	0
PG-S2-16	3	0	3
PG-S2-17	3	0	3
PG-S2-18	2	0	2
PG-S2-19	1	0	1
NS-S1-1	0	0	0
NS-S1-2	0	0	0
NS-S1-3	0	0	0
NS-S1-4	0	0	0
NS-S1-5	0	0	0
NS-S1-6	0	0	0
NS-S1-7	0	0	0

Participant Code	Q.1 /4	Q.2-6	Sum X /24	X Squared	Sum Y /8	Y Squared	X x Y
OS-S1-1	3	7	10	100	4	16	40
OS-S1-2	3	6	9	81	3	9	27
OS-S1-3	3	6	9	81	6	36	54
OS-S1-4	1	3	4	16	3	9	12
OS-S1-5	0	9	9	81	0	0	0
OS-S1-6	1	9	10	100	6	36	60
OS-S1-7	2	3	5	25	6	36	30
OS-S1-8	1	3	4	16	6	36	24
OS-S1-9	1	6	7	49	6	36	42
OS-S1-10	3	9	12	144	6	36	72
OS-S1-11	0	9	9	81	6	36	54
OS-S1-12	1	8	9	81	7	49	63
OS-S2-1	3	14	17	289	7	49	119
OS-S2-2	3	7	10	100	7	49	70
OS-S2-3	3	12	15	225	8	64	120
OS-S2-4	0	15	15	225	6	36	90
OS-S2-5	3	13	16	256	7	49	112
OS-S2-6	3	3	6	36	7	49	42
OS-S2-7	3	7	10	100	8	64	80
OS-S2-8	3	9	12	144	7	49	84
OS-S2-9	3	3	6	36	3	9	18
OS-S2-10	3	9	12	144	6	36	72
OS-S2-11	3	4	7	49	6	36	42
OS-S2-12	3	7	10	100	6	36	60
SD-S1-1	3	11	14	196	7	49	98
SD-S1-2	4	11	15	225	6	36	90
SD-S1-3	4	6	10	100	7	49	70
SD-S1-4	3	6	9	81	2	4	18
SD-S1-5	4	16	20	400	0	0	0
SD-S1-6	3	15	18	324	6	36	108
SD-S1-7	4	8	12	144	4	16	48
SD-S1-8	4	6	10	100	2	4	20
SD-S1-10	4	3	7	49	3	9	21
SD-S1-11	3	6	9	81	6	36	54
SD-S1-12	4	16	20	400	7	49	140
SD-S1-13	0	0	0	0	0	0	0
SD-S1-14	4	18	22	484	8	64	176
SD-S1-15	3	3	6	36	6	36	36
SD-S1-16	3	7	10	100	7	49	70
SD-S1-17	4	8	12	144	8	64	96
SD-S1-18	3	3	6	36	5	25	30
SD-S1-19	3	13	16	256	6	36	96
SD-S1-20	3	9	12	144	6	36	72
SD-S1-21	3	7	10	100	6	36	60
SD-S1-22	0	0	0	0	0	0	0
GV-S1-1	3	7	10	100	8	64	80
GV-S1-2	3	14	17	289	7	49	119
GV-S1-3	4	11	15	225	7	49	105
GV-S1-4	4	11	15	225	7	49	105
GV-S1-5	4	14	18	324	7	49	126
NO-S1-1	3	16	19	361	4	16	76
NO-S1-2	3	13	16	256	4	16	64
NO-S1-3	4	12	16	256	7	49	112

NO-S1-4	4	0	4	16	8	64	32
NO-S1-6	4	15	19	361	6	36	114
NO-S1-7	4	16	20	400	8	64	160
NO-S1-8	3	12	15	225	8	64	120
NO-S1-9	3	3	6	36	3	9	18
NO-S1-10	3	10	13	169	6	36	78
NO-S1-11	3	8	11	121	6	36	66
NO-S1-12	4	19	23	529	8	64	184
NO-S1-13	3	3	6	36	8	64	48
NO-S1-14	0	16	16	256	3	9	48
NO-S1-15	0	3	3	9	6	36	18
PG-S1-1	3	10	13	169	8	64	104
PG-S1-2	3	13	16	256	8	64	128
PG-S1-3	3	12	15	225	4	16	60
PG-S1-4	3	6	9	81	6	36	54
PG-S1-5	0	12	12	144	6	36	72
PG-S1-6	3	13	16	256	8	64	128
PG-S1-7	3	12	15	225	3	9	45
PG-S1-8	3	16	19	361	7	49	133
PG-S1-9	3	7	10	100	7	49	70
PG-S1-10	3	3	6	36	6	36	36
PG-S1-12	0	6	6	36	6	36	36
PG-S1-13	0	9	9	81	6	36	54
PG-S2-1	3	7	10	100	3	9	30
PG-S2-2	4	10	14	196	8	64	112
PG-S2-3	0	13	13	169	6	36	78
PG-S2-4	0	3	3	9	6	36	18
PG-S2-5	3	9	12	144	8	64	96
PG-S2-6	3	6	9	81	6	36	54
PG-S2-7	3	6	9	81	6	36	54
PG-S2-8	4	18	22	484	7	49	154
PG-S2-9	4	8	12	144	7	49	84
PG-S2-10	3	15	18	324	6	36	108
PG-S2-11	4	9	13	169	6	36	78
PG-S2-12	4	17	21	441	8	64	168
PG-S2-13	3	14	17	289	8	64	136
PG-S2-14	4	16	20	400	6	36	120
PG-S2-15	0	3	3	9	3	9	9
PG-S2-16	3	9	12	144	4	16	48
PG-S2-17	3	12	15	225	3	9	45
PG-S2-18	3	12	15	225	3	9	45
PG-S2-19	0	9	9	81	7	49	63
NS-S1-1	3	18	21	441	8	64	168
NS-S1-2	4	18	22	484	8	64	176
NS-S1-3	3	12	15	225	8	64	120
NS-S1-4	3	17	20	400	7	49	140
NS-S1-5	4	17	21	441	3	9	63
NS-S1-6	3	15	18	324	6	36	108
NS-S1-7	0	9	9	81	6	36	54

Pearson Correlation Coefficient	Calculations
1. N	102
2. SUM "X"	1252
3. SUM "X" Squared	18234
4. SUM "Y"	592
5. SUM "Y" Squared	3842
6. SUM XY	7612
7a. N x (SUM "X" Squared)	1859868
7b. (Sum X) Squared	1567504
7. 7a-7b	292364
8a. N x (SUM "Y" Squared)	391884
8b. (Sum "Y") Squared	350464
8. 8a-8b	41420
9. Step 7 x Step 8	12109716880
10. Square Root of Step 9	110044.1588
11a. N x SUM XY	776424
11b. SUM X x SUM Y	741184
11. 11a - 11b	35240
12. Step 11 / Step 10	0.32023508
13. df= N - 2	100
14. As per Fisher's Table, p=	0.254
15. Significance Level	0.01
Mean for X	12.2745098
Standard Deviation for X	5.301048477
Mean for Y	5.803921569
Standard Deviation for Y	1.995284714

Participant Code	X=Q. 1-3 /12	As %	X Squared	Y=AP Interest /8	As a %	Y Squared
OS-S1-1	10	83.33	100	7	87.5	49
OS-S1-2	10	83.33	100	7	87.5	49
OS-S1-3	10	83.33	100	6	75	36
OS-S1-4	10	83.33	100	7	87.5	49
OS-S1-5	10	83.33	100	6	75	36
OS-S1-6	6	50	36	6	75	36
OS-S1-7	9	75	81	6	75	36
OS-S1-8	10	83.33	100	6	75	36
OS-S1-9	10	83.33	100	8	100	64
OS-S1-10	9	75	81	6	75	36
OS-S1-11	10	83.33	100	6	75	36
OS-S1-12	9	75	81	6	75	36
OS-S2-1	10	83.33	100	6	75	36
OS-S2-2	11	91.67	121	8	100	64
OS-S2-3	9	75	81	6	75	36
OS-S2-4	6	50	36	5	62.5	25
OS-S2-5	10	83.33	100	7	87.5	49
OS-S2-6	11	91.67	121	6	75	36
OS-S2-7	10	83.33	100	6	75	36
OS-S2-8	9	75	81	5	62.5	25
OS-S2-9	11	91.67	121	5	62.5	25
OS-S2-10	9	75	81	4	50	16
OS-S2-11	9	75	81	6	75	36
OS-S2-12	9	75	81	5	62.5	25
SD-S1-1	9	75	81	4	50	16
SD-S1-2	7	58.33	49	4	50	16
SD-S1-3	3	25	9	2	25	4
SD-S1-4	10	83.33	100	4	50	16
SD-S1-5	9	75	81	3	37.5	9
SD-S1-6	9	75	81	4	50	16
SD-S1-7	12	100	144	4	50	16
SD-S1-8	10	83.33	100	4	50	16
SD-S1-10	9	75	81	2	25	4
SD-S1-11	7	58.33	49	5	62.5	25
SD-S1-12	9	75	81	8	100	64
SD-S1-13	6	50	36	2	25	4
SD-S1-14	10	83.33	100	8	100	64
SD-S1-15	9	75	81	5	62.5	25
SD-S1-16	12	100	144	2	25	4
SD-S1-17	11	91.67	121	8	100	64
SD-S1-18	9	75	81	6	75	36
SD-S1-19	8	66.67	64	4	50	16
SD-S1-20	9	75	81	6	75	36
SD-S1-21	10	83.33	100	7	87.5	49
SD-S1-22	9	75	81	4	50	16
GV-S1-1	9	75	81	6	75	36
GV-S1-2	12	100	144	7	87.5	49
GV-S1-3	10	83.33	100	6	75	36
GV-S1-4	11	91.67	121	8	100	64
GV-S1-5	9	75	81	7	87.5	49
NO-S1-1	6	50	36	2	25	4
NO-S1-2	8	66.67	64	3	37.5	9
NO-S1-3	11	91.67	121	8	100	64

NO-S1-4	10	83.33	100	5	62.5	25
NO-S1-6	8	66.67	64	4	50	16
NO-S1-7	11	91.67	121	4	50	16
NO-S1-8	10	83.33	100	4	50	16
NO-S1-9	6	50	36	2	25	4
NO-S1-10	9	75	81	6	75	36
NO-S1-11	9	75	81	3	37.5	9
NO-S1-12	8	66.67	64	2	25	4
NO-S1-13	7	58.33	49	4	50	16
NO-S1-14	8	66.67	64	6	75	36
NO-S1-15	5	41.67	25	4	50	16
PG-S1-1	9	75	81	6	75	36
PG-S1-2	10	83.33	100	8	100	64
PG-S1-3	10	83.33	100	6	75	36
PG-S1-4	10	83.33	100	7	87.5	49
PG-S1-5	9	75	81	6	75	36
PG-S1-6	10	83.33	100	7	87.5	49
PG-S1-7	7	58.33	49	4	50	16
PG-S1-8	10	83.33	100	5	62.5	25
PG-S1-9	12	100	144	8	100	64
PG-S1-10	11	91.67	121	8	100	64
PG-S1-12	9	75	81	5	62.5	25
PG-S1-13	10	83.33	100	6	75	36
PG-S2-1	9	75	81	4	50	16
PG-S2-2	9	75	81	5	62.5	25
PG-S2-3	9	75	81	5	62.5	25
PG-S2-4	11	91.67	121	8	100	64
PG-S2-5	10	83.33	100	7	87.5	49
PG-S2-6	10	83.33	100	7	87.5	49
PG-S2-7	10	83.33	100	6	75	36
PG-S2-8	11	91.67	121	7	87.5	49
PG-S2-9	10	83.33	100	8	100	64
PG-S2-10	9	75	81	7	87.5	49
PG-S2-11	12	100	144	8	100	64
PG-S2-12	11	91.67	121	7	87.5	49
PG-S2-13	11	91.67	121	6	75	36
PG-S2-14	8	66.67	64	5	62.5	25
PG-S2-15	6	50	36	4	50	16
PG-S2-16	11	91.67	121	8	100	64
PG-S2-17	11	91.67	121	6	75	36
PG-S2-18	9	75	81	5	62.5	25
PG-S2-19	9	75	81	3	37.5	9
NS-S1-1	11	91.67	121	7	87.5	49
NS-S1-2	9	75	81	6	75	36
NS-S1-3	11	91.67	121	6	75	36
NS-S1-4	10	83.33	100	7	87.5	49
NS-S1-5	10	83.33	100	5	62.5	25
NS-S1-6	9	75	81	6	75	36
NS-S1-7	10	83.33	100	8	100	64

Pearson Correlative Coefficient	Calculations					
1. N	102					
2. SUM "X"	944					
3. SUM "X" Squared	9078					
4. SUM "Y"	562					
5. SUM "Y" Squared	3410					
6. SUM XY	5405					
7a. N SUM X Squared	925956					
7b. (Sum X) Squared	891136					
7. 7a-7b	34820					
8a. N SUM Y Squared	347820					
8b. (Sum Y) Squared	315844					
8. 8a-8b	31976					
9. Step 7 X Step 8	1113404320					
10. Square Root of Step 9	33367.71374					
11a. N SUM XY	551310					
11b. SUM X x SUM Y	530528					
11. 11a - 11b	20782					
12. Step 11 / Step 10	0.622817618					
13. df= N - 2	100					
14. As per Fisher's Table, p=	0.3211					
15. Significance Level	0.001					
Mean for X	9.352941176					
Standard Deviation for X	1.588545904					
Mean for Y	5.588235294					
Standard Deviation for Y	1.682394076					

Participant Code	X=C Q 6 /4	X Sq	X1= CQ 7 /4	X1 Sq	Y=OL AP In. /8	Y Sq	X x Y	X1 xY
OS-S1-1	4	16	0	0	7	49	28	0
OS-S1-2	0	0	4	16	6	36	0	24
OS-S1-3	3	9	0	0	6	36	18	0
OS-S1-4	3	9	4	16	7	49	21	28
OS-S1-5	0	0	3	9	5	25	0	15
OS-S1-6	2	4	4	16	6	36	12	24
OS-S1-7	2	4	3	9	7	49	14	21
OS-S1-8	0	0	4	16	6	36	0	24
OS-S1-9	4	16	4	16	8	64	32	32
OS-S1-10	3	9	3	9	5	25	15	15
OS-S1-11	4	16	4	16	6	36	24	24
OS-S1-12	3	9	4	16	6	36	18	24
OS-S2-1	3	9	4	16	6	36	18	24
OS-S2-2	3	9	3	9	4	16	12	12
OS-S2-3	4	16	4	16	8	64	32	32
OS-S2-4	2	4	3	9	5	25	10	15
OS-S2-5	3	9	4	16	7	49	21	28
OS-S2-6	3	9	4	16	5	25	15	20
OS-S2-7	2	4	3	9	5	25	10	15
OS-S2-8	3	9	3	9	6	36	18	18
OS-S2-9	3	9	3	9	4	16	12	12
OS-S2-10	3	9	0	0	5	25	15	0
OS-S2-11	2	4	3	9	4	16	8	12
OS-S2-12	2	4	3	9	5	25	10	15
SD-S1-1	4	16	4	16	7	49	28	28
SD-S1-2	3	9	0	0	4	16	12	0
SD-S1-3	1	1	1	1	2	4	2	2
SD-S1-4	3	9	3	9	4	16	12	12
SD-S1-5	2	4	4	16	2	4	4	8
SD-S1-6	3	9	3	9	4	16	12	12
SD-S1-7	0	0	4	16	6	36	0	24
SD-S1-8	3	9	3	9	4	16	12	12
SD-S1-10	2	4	2	4	3	9	6	6
SD-S1-11	3	9	0	0	6	36	18	0
SD-S1-12	4	16	4	16	8	64	32	32
SD-S1-13	3	9	3	9	2	4	6	6
SD-S1-14	4	16	4	16	8	64	32	32
SD-S1-15	0	0	3	9	5	25	0	15
SD-S1-16	3	9	0	0	7	49	21	0
SD-S1-17	4	16	4	16	3	9	12	12
SD-S1-18	4	16	4	16	6	36	24	24
SD-S1-19	4	16	4	16	6	36	24	24
SD-S1-20	4	16	4	16	5	25	20	20
SD-S1-21	2	4	3	9	5	25	10	15
SD-S1-22	2	4	2	4	4	16	8	8
GV-S1-1	3	9	3	9	8	64	24	24
GV-S1-2	4	16	4	16	5	25	20	20
GV-S1-3	2	4	4	16	4	16	8	16
GV-S1-4	4	16	0	0	5	25	20	0
GV-S1-5	4	16	3	9	8	64	32	24
NO-S1-1	3	9	0	0	2	4	6	0
NO-S1-2	2	4	0	0	4	16	8	0
NO-S1-3	3	9	3	9	6	36	18	18

NO-S1-4	4	16	4	16	7	49	28	28
NO-S1-6	3	9	4	16	5	25	15	20
NO-S1-7	0	0	4	16	2	4	0	8
NO-S1-8	3	9	3	9	5	25	15	15
NO-S1-9	2	4	0	0	4	16	8	0
NO-S1-10	3	9	3	9	6	36	18	18
NO-S1-11	3	9	3	9	4	16	12	12
NO-S1-12	3	9	3	9	6	36	18	18
NO-S1-13	2	4	2	4	4	16	8	8
NO-S1-14	3	9	3	9	5	25	15	15
NO-S1-15	3	9	3	9	5	25	15	15
PG-S1-1	3	9	0	0	6	36	18	0
PG-S1-2	3	9	4	16	8	64	24	32
PG-S1-3	4	16	4	16	6	36	24	24
PG-S1-4	3	9	3	9	6	36	18	18
PG-S1-5	3	9	3	9	6	36	18	18
PG-S1-6	4	16	3	9	7	49	28	21
PG-S1-7	3	9	3	9	5	25	15	15
PG-S1-8	0	0	3	9	5	25	0	15
PG-S1-9	3	9	0	0	8	64	24	0
PG-S1-10	3	9	4	16	8	64	24	32
PG-S1-12	0	0	3	9	5	25	0	15
PG-S1-13	4	16	0	0	5	25	20	0
PG-S2-1	3	9	3	9	4	16	12	12
PG-S2-2	3	9	0	0	3	9	9	0
PG-S2-3	3	9	3	9	5	25	15	15
PG-S2-4	3	9	3	9	8	64	24	24
PG-S2-5	3	9	4	16	6	36	18	24
PG-S2-6	3	9	0	0	6	36	18	0
PG-S2-7	3	9	3	9	5	25	15	15
PG-S2-8	4	16	4	16	6	36	24	24
PG-S2-9	3	9	3	9	6	36	18	18
PG-S2-10	3	9	4	16	7	49	21	28
PG-S2-11	4	16	0	0	8	64	32	0
PG-S2-12	4	16	0	0	7	49	28	0
PG-S2-13	3	9	3	9	6	36	18	18
PG-S2-14	3	9	3	9	5	25	15	15
PG-S2-15	2	4	3	9	5	25	10	15
PG-S2-16	0	0	3	9	5	25	0	15
PG-S2-17	3	9	0	0	5	25	15	0
PG-S2-18	3	9	3	9	5	25	15	15
PG-S2-19	3	9	3	9	3	9	9	9
NS-S1-1	3	9	4	16	7	49	21	28
NS-S1-2	3	9	4	16	6	36	18	24
NS-S1-3	3	9	4	16	8	64	24	32
NS-S1-4	3	9	3	9	6	36	18	18
NS-S1-5	3	9	3	9	5	25	15	15
NS-S1-6	3	9	3	9	6	36	18	18
NS-S1-7	3	9	3	9	6	36	18	18

Technical Knowledge / AP Online Interest	
Pearson Correlative Coefficient	Calculations
1. N	102
2. SUM "X"	283
3. SUM "X" Squared	901
4. SUM "Y"	559
5. SUM "Y" Squared	3295
6. SUM XY	1607
7a. N x SUM X Squared	91902
7b. (Sum X) Squared	80089
7. 7a-7b	11813
8a. N SUM Y Squared	336090
8b. (Sum Y) Squared	312481
8. 8a-8b	23609
9. Step 7 X Step 8	278893117
10. Square Root of Step 9	16700.0933
11a. N SUM XY	163914
11b. SUM X x SUM Y	158197
11. 11a - 11b	5717
12. Step 11 / Step 10	0.34233342
13. df= N - 2	100
14. As per Fisher's Table, p=	0.3211
15. Significance Level	0.001
Technical Confidence / AP Online Interest	
Pearson Correlative Coefficient	Calculations
1. N	102
2. SUM "X"	281
3. SUM "X" Squared	971
4. SUM "Y"	559
5. SUM "Y" Squared	3295
6. SUM XY	1575
7a. N x SUM X Squared	99042
7b. (Sum X) Squared	78961
7. 7a-7b	20081
8a. N SUM Y Squared	336090
8b. (Sum Y) Squared	312481
8. 8a-8b	23609
9. Step 7 X Step 8	474092329
10. Square Root of Step 9	21773.6614
11a. N SUM XY	160650
11b. SUM X x SUM Y	157079
11. 11a - 11b	3571
12. Step 11 / Step 10	0.16400549
13. df= N - 2	100
14. As per Fisher's Table, p=	0.1638
15. Significance Level	0.1
Mean for X	2.7745098
Standard Deviation for X	1.06556496
Mean for X.1	2.75490196
Standard Deviation for X.1	1.38928868
Mean for Y	5.48039216
Standard Deviation for Y	1.50639416

Participant Code	X=AP Int./8	X Sq.	Y=OL Int. /8	Y Sq.	X x Y	X.1 #AP In-Sc.C	X.1Sq.	X.1xY
OS-S1-1	7	49	7	49	49	0	0	0
OS-S1-2	7	49	6	36	42	0	0	0
OS-S1-3	6	36	6	36	36	0	0	0
OS-S1-4	7	49	7	49	49	0	0	0
OS-S1-5	6	36	5	25	30	0	0	0
OS-S1-6	6	36	6	36	36	0	0	0
OS-S1-7	6	36	7	49	42	0	0	0
OS-S1-8	6	36	6	36	36	0	0	0
OS-S1-9	8	64	8	64	64	0	0	0
OS-S1-10	6	36	5	25	30	0	0	0
OS-S1-11	6	36	6	36	36	0	0	0
OS-S1-12	6	36	6	36	36	0	0	0
OS-S2-1	6	36	6	36	36	0	0	0
OS-S2-2	8	64	4	16	32	0	0	0
OS-S2-3	6	36	8	64	48	0	0	0
OS-S2-4	5	25	5	25	25	0	0	0
OS-S2-5	7	49	7	49	49	0	0	0
OS-S2-6	6	36	5	25	30	0	0	0
OS-S2-7	6	36	5	25	30	0	0	0
OS-S2-8	5	25	6	36	30	0	0	0
OS-S2-9	5	25	4	16	20	0	0	0
OS-S2-10	4	16	5	25	20	0	0	0
OS-S2-11	6	36	4	16	24	0	0	0
OS-S2-12	5	25	5	25	25	0	0	0
SD-S1-1	4	16	7	49	28	7	49	49
SD-S1-2	4	16	4	16	16	7	49	28
SD-S1-3	2	4	2	4	4	7	49	14
SD-S1-4	4	16	4	16	16	7	49	28
SD-S1-5	3	9	2	4	6	7	49	14
SD-S1-6	4	16	4	16	16	7	49	28
SD-S1-7	4	16	6	36	24	7	49	42
SD-S1-8	4	16	4	16	16	7	49	28
SD-S1-10	2	4	3	9	6	7	49	21
SD-S1-11	5	25	6	36	30	7	49	42
SD-S1-12	8	64	8	64	64	7	49	56
SD-S1-13	2	4	2	4	4	7	49	14
SD-S1-14	8	64	8	64	64	7	49	56
SD-S1-15	5	25	5	25	25	7	49	35
SD-S1-16	2	4	7	49	14	7	49	49
SD-S1-17	8	64	3	9	24	7	49	21
SD-S1-18	6	36	6	36	36	7	49	42
SD-S1-19	4	16	6	36	24	7	49	42
SD-S1-20	6	36	5	25	30	7	49	35
SD-S1-21	7	49	5	25	35	7	49	35
SD-S1-22	4	16	4	16	16	7	49	28
GV-S1-1	6	36	8	64	48	4	16	32
GV-S1-2	7	49	5	25	35	4	16	20
GV-S1-3	6	36	4	16	24	4	16	16
GV-S1-4	8	64	5	25	40	4	16	20
GV-S1-5	7	49	8	64	56	4	16	32
NO-S1-1	2	4	2	4	4	1	1	2
NO-S1-2	3	9	4	16	12	1	1	4
NO-S1-3	8	64	6	36	48	1	1	6

NO-S1-4	5	25	7	49	35	1	1	7
NO-S1-6	4	16	5	25	20	1	1	5
NO-S1-7	4	16	2	4	8	1	1	2
NO-S1-8	4	16	5	25	20	1	1	5
NO-S1-9	2	4	4	16	8	1	1	4
NO-S1-10	6	36	6	36	36	1	1	6
NO-S1-11	4	16	4	16	16	1	1	4
NO-S1-12	2	4	6	36	12	1	1	6
NO-S1-13	4	16	4	16	16	1	1	4
NO-S1-14	6	36	5	25	30	1	1	5
NO-S1-15	4	16	5	25	20	1	1	5
PG-S1-1	6	36	6	36	36	0	0	0
PG-S1-2	8	64	8	64	64	0	0	0
PG-S1-3	6	36	6	36	36	0	0	0
PG-S1-4	7	49	6	36	42	0	0	0
PG-S1-5	6	36	6	36	36	0	0	0
PG-S1-6	7	49	7	49	49	0	0	0
PG-S1-7	4	16	5	25	20	0	0	0
PG-S1-8	5	25	5	25	25	0	0	0
PG-S1-9	8	64	8	64	64	0	0	0
PG-S1-10	8	64	8	64	64	0	0	0
PG-S1-12	5	25	5	25	25	0	0	0
PG-S1-13	6	36	5	25	30	0	0	0
PG-S2-1	4	16	4	16	16	3	9	12
PG-S2-2	5	25	3	9	15	3	9	9
PG-S2-3	5	25	5	25	25	3	9	15
PG-S2-4	8	64	8	64	64	3	9	24
PG-S2-5	7	49	6	36	42	3	9	18
PG-S2-6	7	49	6	36	42	3	9	18
PG-S2-7	6	36	5	25	30	3	9	15
PG-S2-8	7	49	6	36	42	3	9	18
PG-S2-9	8	64	6	36	48	3	9	18
PG-S2-10	7	49	7	49	49	3	9	21
PG-S2-11	8	64	8	64	64	3	9	24
PG-S2-12	7	49	7	49	49	3	9	21
PG-S2-13	6	36	6	36	36	3	9	18
PG-S2-14	5	25	5	25	25	3	9	15
PG-S2-15	4	16	5	25	20	3	9	15
PG-S2-16	8	64	5	25	40	3	9	15
PG-S2-17	6	36	5	25	30	3	9	15
PG-S2-18	5	25	5	25	25	3	9	15
PG-S2-19	3	9	3	9	9	3	9	9
NS-S1-1	7	49	7	49	49	0	0	0
NS-S1-2	6	36	6	36	36	0	0	0
NS-S1-3	6	36	8	64	48	0	0	0
NS-S1-4	7	49	6	36	42	0	0	0
NS-S1-5	5	25	5	25	25	0	0	0
NS-S1-6	6	36	6	36	36	0	0	0
NS-S1-7	8	64	6	36	48	0	0	0

Comparison of General Interest in AP Course Work and Online AP Course Work	
Pearson Correlative Coefficient	Calculations
1. N	102
2. SUM "X"	571
3. SUM "X" Squared	3481
4. SUM "Y"	559
5. SUM "Y" Squared	3259
6. SUM XY	3239
7a. N SUM X Squared	355062
7b. (Sum X) Squared	326041
7. 7a-7b	29021
8a. N SUM Y Squared	332418
8b. (Sum Y) Squared	312481
8. 8a-8b	19937
9. Step 7 X Step 8	578591677
10. Square Root of Step 9	24053.93267
11a. N SUM XY	330378
11b. SUM X x SUM Y	319189
11. 11a - 11b	11189
12. Step 11 / Step 10	0.465163021
13. df= N - 2	100
14. As per Fisher's Table, p=	0.3211
15. Significance Level	0.001
Mean for X	5.598039216
Standard Deviation	1.670152065
Mean for Y	5.480392157
Standard Deviation for Y	1.506394163

Comparison of Number of In-School Courses Available to Participants and AP Online Interest	
Pearson Correlative Coefficient	Calculations
1. N	102
2. SUM "X.1"	238
3. SUM "X.1" Squared	1294
4. SUM "Y"	559
5. SUM "Y" Squared	3295
6. SUM X.1 x Y	1207
7a. N SUM X.1 Squared	131988
7b. (Sum X.1) Squared	56644
7. 7a-7b	75344
8a. N SUM Y Squared	336090
8b. (Sum Y) Squared	312481
8. 8a-8b	23609
9. Step 7 X Step 8	1778796496
10. Square Root of Step 9	42175.78092
11a. N SUM X.1 x Y	123114
11b. SUM X.1 x SUM Y	133042
11. 11a - 11b	-9928
12. Step 11 / Step 10	-0.23539576
13. df= N - 2	100
14. As per Fisher's Table, p=	0.2301
15. Significance Level	0.02
Mean for X.1	2.333333333
Standard Deviation for X.1	2.691064857
Mean for Y	5.480392157
Standard Deviation for Y	1.506394163

APPENDIX E. d : Course Preferences

Part Code	A-H	A-D	A-G	Bio	Calc	Chem	CSc	EcMi	EcMa	EnLan	EnLit	EurH	FrLan	FrLit	GLan	GLit	GPus	GPC	IEL	LatV	LatLi	Mus	PhB	PhC	Psy	SpLa	SpLi	Stat	US His	EvSc
OS-S1-1					2							1														3				
OS-S1-2				1	2	3																								
OS-S1-3					3	1																		3						
OS-S1-4				1						3															2					
OS-S1-5				3		2							1																	
OS-S1-6												2														3	1			
OS-S1-7											3		2									1								
OS-S1-8					3					1															2					
OS-S1-9				2						3												1								
OS-S1-10									1									2				3								
OS-S1-11					3		1																	2						
OS-S1-12		2								3										1										
OS-S2-1			1																			3			2					
OS-S2-2				3		2						1																		
OS-S2-3							*4																	3						
OS-S2-4							3	2															1							
OS-S2-5										2	1														3					
OS-S2-6				3		2	1																							
OS-S2-7				3		2					1																			
OS-S2-8				3									1		2															
OS-S2-9				3		1																			2					
OS-S2-10				2		1																			3					
OS-S2-11				2									3																	3
OS-S2-12				3		1																			2					
SD-S1-1				1				3	2																					
SD-S1-2					1		2			3																				
SD-S1-3																	1								2				3	
SD-S1-4												2						1											3	
SD-S1-5					*5																			1						
SD-S1-6												2													1				3	
SD-S1-7					2	1																		3						
SD-S1-8				3	2	1																								
SD-S1-10				2	1					3																				
SD-S1-11		3					1																			2				
SD-S1-12					3		1																2							
SD-S1-13																														
SD-S1-14					2		1																3							
SD-S1-15											2		3																1	
SD-S1-16				2																		3			1					
SD-S1-17					1		2																3							
SD-S1-18					2		3																1							
SD-S1-19											3				1										2					
SD-S1-20			1			3																	2							

APPENDIX E. d : Course Preferences

SD-S1-21				1	3																		2							
SD-S1-22												3										2						1		
GV-S1-1					3		1				2																			
GV-S1-2				3		2					1																			
GV-S1-3											2	3	1																	
GV-S1-4			3	1						2																				
GV-S1-5				2								3						1												
NO-S1-1	2	2	2																											
NO-S1-2		1					*5																							
NO-S1-3			3	2								1																		
NO-S1-4				3								2										1								
NO-S1-6		2	1																			3								
NO-S1-7																														
NO-S1-8					*5																		1							
NO-S1-9																														
NO-S1-10			1							2															3					
NO-S1-11																														
NO-S1-12						1					3															2				
NO-S1-13																														
NO-S1-14			1	3																						2				
NO-S1-15													1		2											3				
PG-S1-1				3		2					1																			
PG-S1-2				3						2															1					
PG-S1-3				3						2															1					
PG-S1-4		2								1															3					
PG-S1-5				3						1			2																	
PG-S1-6				3		1																								2
PG-S1-7				3		2											1													
PG-S1-8				2						3	1																			
PG-S1-9				2		1				3																				
PG-S1-10											1											2			3					
PG-S1-12										3	2		1																	
PG-S1-13				1						3													2							
PG-S2-1																														
PG-S2-2					3			2	1																					
PG-S2-3						2					3														3					
PG-S2-4						3																	2		1					
PG-S2-5					3	1																			2					
PG-S2-6				3	2	1																								
PG-S2-7					2		3																		1					
PG-S2-8				1							2														3					
PG-S2-9				3		2					1																			
PG-S2-10			2	3		1																								
PG-S2-11				3	1																		2							

PG-S2-12											3										2				1					
PG-S2-13					2		3																1							
PG-S2-14																									1	2			3	
PG-S2-15		2							1																	3				
PG-S2-16				3	2	1																								
PG-S2-17					3		1																	2						
PG-S2-18				3		2																	1							
PG-S2-19				3		2																				1				
NS-S1-1			1							3															2					
NS-S1-2			1							2															3					
NS-S1-3										3	2														1					
NS-S1-4										3			2												1					
NS-S1-5						1				3	2																			
NS-S1-6							1																3	2						
NS-S1-7				1			2			3																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Xs Select	1	7	11	41	25	28	17	3	4	23	19	10	10	0	3	0	2	3	0	1	1	9	14	7	27	9	1	1	5	2
Value	2	14	17	98	51	45	26	7	5	57	36	20	17	0	5	0	2	4	0	1	2	19	26	16	52	21	1	1	13	5

Participant Code	X=Q. 1-3,5,6 /19	As%	X Squ.	Y=OL AP In. /8	As%	Y Squ.	X x Y
OS-S1-1 E-1	11	57.9	121	7	87.5	49	77
OS-S1-2	16	84.2	256	6	75	36	96
OS-S1-3	15	78.9	225	6	75	36	90
OS-S1-4	12	63.2	144	7	87.5	49	84
OS-S1-5 E-2	11	57.9	121	5	62.5	25	55
OS-S1-6 E-3	10	52.6	100	6	75	36	60
OS-S1-7 E-4	9	47.4	81	7	87.5	49	63
OS-S1-8	13	68.4	169	6	75	36	78
OS-S1-9	12	63.2	144	8	100	64	96
OS-S1-10 E-5	11	57.9	121	5	62.5	25	55
OS-S1-11 E-6	9	47.4	81	6	75	36	54
OS-S1-12 E-7	11	57.9	121	6	75	36	66
OS-S2-1 E-8	10	52.6	100	6	75	36	60
OS-S2-2	14	73.7	196	4	50	16	56
OS-S2-3	13	68.4	169	8	100	64	104
OS-S2-4 E-9	11	57.9	121	5	62.5	25	55
OS-S2-5	17	89.5	289	7	87.5	49	119
OS-S2-6	16	84.2	256	5	62.5	25	80
OS-S2-7	12	63.2	144	5	62.5	25	60
OS-S2-8	12	63.2	144	6	75	36	72
OS-S2-9	11	57.9	121	4	50	16	44
OS-S2-10 E-10	11	57.9	121	5	62.5	25	55
OS-S2-11	11	57.9	121	4	50	16	44
OS-S2-12 E-11	11	57.9	121	5	62.5	25	55
SD-S1-1	19	100	361	7	87.5	49	133
SD-S1-2	9	47.4	81	4	50	16	36
SD-S1-3	14	73.7	196	2	25	4	28
SD-S1-4	11	57.9	121	4	50	16	44
SD-S1-5	14	73.7	196	2	25	4	28
SD-S1-6	10	52.6	100	4	50	16	40
SD-S1-7 E-12	11	57.9	121	6	75	36	66
SD-S1-8	12	63.2	144	4	50	16	48
SD-S1-10	11	57.9	121	3	37.5	9	33
SD-S1-11 E-13	8	42.1	64	6	75	36	48
SD-S1-12 E-14	10	52.6	100	8	100	64	80
SD-S1-13	11	57.9	121	2	25	4	22
SD-S1-14 E-15	9	47.4	81	8	100	64	72
SD-S1-15 E-16	11	57.9	121	5	62.5	25	55
SD-S1-16	13	68.4	169	7	87.5	49	91
SD-S1-17	19	100	361	3	37.5	9	57
SD-S1-18	18	94.7	324	6	75	36	108
SD-S1-19	14	73.7	196	6	75	36	84
SD-S1-20	12	63.2	144	5	62.5	25	60
SD-S1-21 E-17	11	57.9	121	5	62.5	25	55
SD-S1-22	13	68.4	169	4	50	16	52
GV-S1-1	12	63.2	144	8	100	64	96
GV-S1-2 E-18	10	52.6	100	5	62.5	25	50
GV-S1-3	19	100	361	4	50	16	76
GV-S1-4 E-19	9	47.4	81	5	62.5	25	45
GV-S1-5	13	68.4	169	8	100	64	104
NO-S1-1	11	57.9	121	2	25	4	22
NO-S1-2	11	57.9	121	4	50	16	44
NO-S1-3 E-20	11	57.9	121	6	75	36	66

NO-S1-4	14	73.7	196	7	87.5	49	98
NO-S1-6	14	73.7	196	5	62.5	25	70
NO-S1-7	15	78.9	225	2	25	4	30
NO-S1-8 E-21	7	36.8	49	5	62.5	25	35
NO-S1-9	0	0	0	4	50	16	0
NO-S1-10 E-22	9	47.4	81	6	75	36	54
NO-S1-11	16	84.2	256	4	50	16	64
NO-S1-12	14	73.7	196	6	75	36	84
NO-S1-13	11	57.9	121	4	50	16	44
NO-S1-14	13	68.4	169	5	62.5	25	65
NO-S1-15	14	73.7	196	5	62.5	25	70
PG-S1-1 E-23	11	57.9	121	6	75	36	66
PG-S1-2	9	47.4	81	8	100	64	72
PG-S1-3 E-24	10	52.6	100	6	75	36	60
PG-S1-4	14	73.7	196	6	75	36	84
PG-S1-5	13	68.4	169	6	75	36	78
PG-S1-6	13	68.4	169	7	87.5	49	91
PG-S1-7	15	78.9	225	5	62.5	25	75
PG-S1-8 E-25	7	36.8	49	5	62.5	25	35
PG-S1-9 E-26	11	57.9	121	8	100	64	88
PG-S1-10 E-27	9	47.4	81	8	100	64	72
PG-S1-12	12	63.2	144	5	62.5	25	60
PG-S1-13	19	100	361	5	62.5	25	95
PG-S2-1	14	73.7	196	4	50	16	56
PG-S2-2	14	73.7	196	3	37.5	9	42
PG-S2-3	12	63.2	144	5	62.5	25	60
PG-S2-4	14	73.7	196	8	100	64	112
PG-S2-5 E-28	11	57.9	121	6	75	36	66
PG-S2-6	18	94.7	324	6	75	36	108
PG-S2-7 E-29	10	52.6	100	5	62.5	25	50
PG-S2-8	14	73.7	196	6	75	36	84
PG-S2-9 E-30	10	52.6	100	6	75	36	60
PG-S2-10 E-31	10	52.6	100	7	87.5	49	70
PG-S2-11 E-32	10	52.6	100	8	100	64	80
PG-S2-12 E-33	11	57.9	121	7	87.5	49	77
PG-S2-13 E-34	11	57.9	121	6	75	36	66
PG-S2-14	13	68.4	169	5	62.5	25	65
PG-S2-15	12	63.2	144	5	62.5	25	60
PG-S2-16	14	73.7	196	5	62.5	25	70
PG-S2-17	16	84.2	256	5	62.5	25	80
PG-S2-18	14	73.7	196	5	62.5	25	70
PG-S2-19	9	47.4	81	3	37.5	9	27
NS-S1-1	9	47.4	81	7	87.5	49	63
NS-S1-2 E-35	11	57.9	121	6	75	36	66
NS-S1-3 E-36	9	47.4	81	8	100	64	72
NS-S1-4	12	63.2	144	6	75	36	72
NS-S1-5	13	68.4	169	5	62.5	25	65
NS-S1-6	14	73.7	196	6	75	36	84
NS-S1-7	15	78.9	225	6	75	36	90

Pearson Coefficient	Calculations						
1. N	102						
2. SUM "X"	1235						
3. SUM "X" Squared	15793						
4. SUM "Y"	559						
5. SUM "Y" Squared	3295						
6. SUM XY	6726						
7a. N x SUM X Squared	1610886						
7b. (Sum X) Squared	1525225						
7. 7a-7b	85661						
8a. N SUM Y Squared	336090						
8b. (Sum Y) Squared	312481						
8. 8a-8b	23609						
9. Step 7 X Step 8	2022370549						
10. Square Root of Step 9	44970.77439						
11a. N SUM XY	686052						
11b. SUM X x SUM Y	690365						
11. 11a - 11b	-4313						
12. Step 11 / Step 10	-0.095906732						
13. df= N - 2	100						
14. As per Fisher's Table, p=	Null						
15. Significance Level	Variables Unrelated						
Mean for X	12.10784314						
Standard Deviation for X	2.86940201						
Mean for Y	5.480392157						
Standard Deviation for Y	1.506394163						
Number of Participants							
Who Express Interest in							
1 or More AP Courses Who							
Express Significant Concern							
About Paying the Cost	35						
As a %	34.3						

Participant Code	Q. F.1-2 /8	X Sq.	Q. F.3-4 /8	X.1 Sq.	AP OL Int. /8	Y Sq.	X x Y	X.1 x Y
OS-S1-1	6	36	6	36	7	49	42	42
OS-S1-2	6	36	6	36	6	36	36	36
OS-S1-3	7	49	6	36	6	36	42	36
OS-S1-4	8	64	5	25	7	49	56	35
OS-S1-5	7	49	7	49	5	25	35	35
OS-S1-6	4	16	7	49	6	36	24	42
OS-S1-7	8	64	6	36	7	49	56	42
OS-S1-8	7	49	6	36	6	36	42	36
OS-S1-9	8	64	6	36	8	64	64	48
OS-S1-10	7	49	7	49	5	25	35	35
OS-S1-11	7	49	5	25	6	36	42	30
OS-S1-12	5	25	8	64	6	36	30	48
OS-S2-1	5	25	7	49	6	36	30	42
OS-S2-2	6	36	5	25	4	16	24	20
OS-S2-3	8	64	6	36	8	64	64	48
OS-S2-4	6	36	6	36	5	25	30	30
OS-S2-5	6	36	7	49	7	49	42	49
OS-S2-6	6	36	6	36	5	25	30	30
OS-S2-7	7	49	8	64	5	25	35	40
OS-S2-8	7	49	3	9	6	36	42	18
OS-S2-9	7	49	7	49	4	16	28	28
OS-S2-10	6	36	6	36	5	25	30	30
OS-S2-11	8	64	7	49	4	16	32	28
OS-S2-12	6	36	5	25	5	25	30	25
SD-S1-1	8	64	4	16	7	49	56	28
SD-S1-2	8	64	7	49	4	16	32	28
SD-S1-3	8	64	8	64	2	4	16	16
SD-S1-4	7	49	7	49	4	16	28	28
SD-S1-5	8	64	8	64	2	4	16	16
SD-S1-6	8	64	7	49	4	16	32	28
SD-S1-7	6	36	5	25	6	36	36	30
SD-S1-8	8	64	5	25	4	16	32	20
SD-S1-10	7	49	5	25	3	9	21	15
SD-S1-11	6	36	7	49	6	36	36	42
SD-S1-12	8	64	7	49	8	64	64	56
SD-S1-13	6	36	7	49	2	4	12	14
SD-S1-14	8	64	5	25	8	64	64	40
SD-S1-15	8	64	6	36	5	25	40	30
SD-S1-16	7	49	8	64	7	49	49	56
SD-S1-17	8	64	8	64	3	9	24	24
SD-S1-18	8	64	7	49	6	36	48	42
SD-S1-19	6	36	5	25	6	36	36	30
SD-S1-20	8	64	7	49	5	25	40	35
SD-S1-21	7	49	7	49	5	25	35	35
SD-S1-22	7	49	5	25	4	16	28	20
GV-S1-1	8	64	6	36	8	64	64	48
GV-S1-2	8	64	5	25	5	25	40	25
GV-S1-3	5	25	4	16	4	16	20	16
GV-S1-4	8	64	8	64	5	25	40	40
GV-S1-5	8	64	5	25	8	64	64	40
NO-S1-1	8	64	5	25	2	4	16	10
NO-S1-2	3	9	7	49	4	16	12	28
NO-S1-3	8	64	7	49	6	36	48	42

NO-S1-4	8	64	4	16	7	49	56	28
NO-S1-6	6	36	5	25	5	25	30	25
NO-S1-7	8	64	5	25	2	4	16	10
NO-S1-8	6	36	5	25	5	25	30	25
NO-S1-9	0	0	0	0	4	16	0	0
NO-S1-10	6	36	5	25	6	36	36	30
NO-S1-11	5	25	7	49	4	16	20	28
NO-S1-12	6	36	4	16	6	36	36	24
NO-S1-13	6	36	5	25	4	16	24	20
NO-S1-14	7	49	5	25	5	25	35	25
NO-S1-15	7	49	4	16	5	25	35	20
PG-S1-1	5	25	6	36	6	36	30	36
PG-S1-2	6	36	6	36	8	64	48	48
PG-S1-3	2	4	7	49	6	36	12	42
PG-S1-4	5	25	6	36	6	36	30	36
PG-S1-5	6	36	7	49	6	36	36	42
PG-S1-6	8	64	7	49	7	49	56	49
PG-S1-7	8	64	5	25	5	25	40	25
PG-S1-8	5	25	3	9	5	25	25	15
PG-S1-9	6	36	7	49	8	64	48	56
PG-S1-10	6	36	6	36	8	64	48	48
PG-S1-12	5	25	6	36	5	25	25	30
PG-S1-13	4	16	4	16	5	25	20	20
PG-S2-1	8	64	7	49	4	16	32	28
PG-S2-2	7	49	7	49	3	9	21	21
PG-S2-3	5	25	7	49	5	25	25	35
PG-S2-4	7	49	5	25	8	64	56	40
PG-S2-5	7	49	8	64	6	36	42	48
PG-S2-6	8	64	6	36	6	36	48	36
PG-S2-7	6	36	6	36	5	25	30	30
PG-S2-8	8	64	7	49	6	36	48	42
PG-S2-9	7	49	7	49	6	36	42	42
PG-S2-10	6	36	6	36	7	49	42	42
PG-S2-11	8	64	7	49	8	64	64	56
PG-S2-12	8	64	7	49	7	49	56	49
PG-S2-13	8	64	8	64	6	36	48	48
PG-S2-14	5	25	6	36	5	25	25	30
PG-S2-15	5	25	6	36	5	25	25	30
PG-S2-16	6	36	6	36	5	25	30	30
PG-S2-17	8	64	8	64	5	25	40	40
PG-S2-18	6	36	5	25	5	25	30	25
PG-S2-19	4	16	4	16	3	9	12	12
NS-S1-1	8	64	5	25	7	49	56	35
NS-S1-2	8	64	6	36	6	36	48	36
NS-S1-3	8	64	5	25	8	64	64	40
NS-S1-4	7	49	5	25	6	36	42	30
NS-S1-5	6	36	6	36	5	25	30	30
NS-S1-6	6	36	6	36	6	36	36	36
NS-S1-7	6	36	5	25	6	36	36	30

Perceived Access To Equipment / AP Online Interest	
Pearson Correlative Coefficient	Calculation
1. N	102
2. SUM "X"	676
3. SUM "X" Squared	4692
4. SUM "Y"	559
5. SUM "Y" Squared	3295
6. SUM XY	3734
7a. N SUM X Squared	478584
7b. (Sum X) Squared	456976
7. 7a-7b	21608
8a. N SUM Y Squared	336090
8b. (Sum Y) Squared	312481
8. 8a-8b	23609
9. Step 7 X Step 8	510143272
10. Square Root of Step 9	22586.35145
11a. N SUM XY	380868
11b. SUM X x SUM Y	377884
11. 11a - 11b	2984
12. Step 11 / Step 10	0.132115185
13. df= N - 2	100
14. As per Fisher's Table, p=	No Signifcance
15. Significance Level	null
Perceived Access to Equipment as Needed / AP Online Interest	
Pearson Correlative Coefficient	
1. N	102
2. SUM "X.1"	610
3. SUM "X.1" Squared	3826
4. SUM "Y"	559
5. SUM "Y" Squared	3295
6. SUM X.1 x Y	3338
7a. N SUM X.1 Squared	390252
7b. (Sum X.1) Squared	372100
7. 7a-7b	18152
8a. N SUM Y Squared	336090
8b. (Sum Y) Squared	312481
8. 8a-8b	23609
9. Step 7 X Step 8	428550568
10. Square Root of Step 9	20701.46294
11a. N SUM X.1Y	340476
11b. SUM X.1 x SUM Y	340990
11. 11a - 11b	-514
12. Step 11 / Step 10	-0.02482916
13. df= N - 2	100
14. As per Fisher's Table, p=	No Signifcance
15. Significance Level	null
Mean for X	6.62745098
Standard Deviation for X	1.441143124
Mean for X.1	5.980392157
Standard Devaition for X.1	1.320876062
Mean for Y	5.480392157
Standard Deviation for Y	1.506394163

APPENDIX E.g : DATA ROSTER FOTTECHNOLOGICAL SUPPORT FEATURES * DENOTES MISSING OR SPOILED RESPONSE

Part. Code	1=N	1=H	1=I	2=N	2=H	2=I	3=N	3=H	3=I	4=N	4=H	4=I	5=N	5=H	5=I	6=N	6=H	6=I	7=N	7=H	7=I	8=N	8=H	8=I	9=N	9=H	9=I		
OS-S1-1	1			1					1			1		1			1			1				1			1	9	
OS-S1-2	1				1			1		1				1		1				1			1			1		9	
OS-S1-3			1	1			1			1				1			1			1			1			1		9	
OS-S1-4			1		1			1				1		1			1			1			1			1		9	
OS-S1-5		1			1			1				1			1				1			1			1			8	*
OS-S1-6			1	1				1			1				1		1			1			1				1	9	
OS-S1-7	1				1		1			1				1				1		1				1		1		9	
OS-S1-8		1		1			1			1				1		1				1		1				1		9	
OS-S1-9		1			1			1		1			1			1			1			1			1			9	
OS-S1-10	1				1			1		1				1			1			1		1				1		9	
OS-S1-11		1			1				1	1				1			1			1		1					1	9	
OS-S1-12		1			1				1	1					1		1				1		1			1		9	
OS-S2-1		1		1					1			1		1			1				1			1			1	9	
OS-S2-2	1					1		1		1				1			1			1			1			1		9	
OS-S2-3		1			1			1				1		1			1			1			1			1		9	
OS-S2-4		1			1			1		1			1				1			1			1			1		9	
OS-S2-5			1		1		1				1			1			1			1			1			1		9	
OS-S2-6			1		1			1				1			1		1			1				1			1	9	
OS-S2-7	1			1			1			1					1			1			1		1				1	9	
OS-S2-8		1				1		1		1				1				1			1	1			1			9	
OS-S2-9		1		1				1			1			1			1			1					1			8	*
OS-S2-10	1			1			1			1				1		1				1		1				1		9	
OS-S2-11		1			1			1		1			1				1			1		1			1			9	
OS-S2-12	1			1			1			1				1		1				1		1				1		9	
SD-S1-1		1				1			1			1			1			1			1			1			1	9	
SD-S1-2		1			1			1			1		1				1			1		1			1			9	
SD-S1-3	1				1		1			1				1		1				1			1			1		9	
SD-S1-4		1			1			1			1			1			1			1			1			1		9	
SD-S1-5		1			1			1			1			1			1			1			1			1		9	
SD-S1-6	1				1			1			1		1				1		1					1			1	9	
SD-S1-7		1			1			1		1				1			1			1		1				1		9	
SD-S1-8		1			1			1			1			1			1			1			1			1		9	
SD-S1-10	1				1		1				1				1			1			1		1			1		9	
SD-S1-11	1				1		1			1					1		1			1		1			1			9	
SD-S1-12		1		1			1			1			1			1			1			1			1			9	
SD-S1-13		1				1		1				1		1		1				1				1			1	9	
SD-S1-14		1			1		1			1			1			1			1			1			1			9	
SD-S1-15		1				1	1			1			1			1			1			1			1			9	
SD-S1-16		1		1			1					1		1			1			1			1			1		9	
SD-S1-17	1				1			1		1					1		1			1		1					1	9	
SD-S1-18		1					1			1					1			1			1	1					1	8	*
SD-S1-19		1			1				1			1		1			1			1			1			1		9	
SD-S1-20	1			1			1			1			1			1			1			1			1			9	

APPENDIX E.g : DATA ROSTER FOTTECHNOLOGICAL SUPPORT FEATURES * DENOTES MISSING OR SPOILED RESPONSE

SD-S1-21			1	1				1		1				1			1		1			1					1	9	
SD-S1-22		1			1			1				1		1		1				1			1				1	9	
GV-S1-1	1			1					1		1			1			1				1		1				1	9	
GV-S1-2			1			1			1			1			1		1			1				1			1	9	
GV-S1-3	1					1			1	1				1			1			1			1			1		9	
GV-S1-4	1			1				1		1			1					1			1	1			1			9	
GV-S1-5		1		1			1				1			1			1			1				1		1		9	
NO-S1-1	1			1			1			1			1					1			1				1			9	
NO-S1-2			1		1			1			1			1			1			1			1					9	
NO-S1-3		1			1			1		1				1			1				1			1			1	9	
NO-S1-4	1			1			1			1			1				1			1					1			9	
NO-S1-6		1		1				1		1			1				1				1			1				9	
NO-S1-7	1			1			1			1			1				1					1			1			9	
NO-S1-8		1			1			1			1			1			1				1				1			9	
NO-S1-9																												0	*
NO-S1-10			1		1			1				1		1			1			1				1			1	9	
NO-S1-11	1				1				1		1			1				1		1			1				1	9	
NO-S1-12		1			1			1				1			1			1			1			1			1	9	
NO-S1-13		1			1			1			1			1			1			1			1				1	9	
NO-S1-14	1			1			1			1			1				1				1				1			9	
NO-S1-15		1			1		1			1				1			1			1			1				1	9	
PG-S1-1		1			1		1			1				1			1			1			1				1	9	
PG-S1-2		1		1			1			1			1				1				1						1	9	
PG-S1-3			1			1			1			1			1			1			1				1			1	9	
PG-S1-4		1			1				1		1					1				1		1					1	9	
PG-S1-5		1			1		1			1			1				1			1		1				1		9	
PG-S1-6	1			1				1			1						1			1				1				9	
PG-S1-7			1			1			1			1			1			1					1				1	9	
PG-S1-8	1				1			1		1				1			1			1				1				9	
PG-S1-9		1			1			1		1				1	1					1			1				1	9	
PG-S1-10		1		1				1		1			1				1				1			1				9	
PG-S1-12		1			1			1			1			1			1				1			1				9	
PG-S1-13		1		1			1			1			1				1				1				1	1		9	
PG-S2-1		1			1			1		1				1			1				1			1				9	
PG-S2-2		1			1			1		1			1				1				1			1		1		9	
PG-S2-3	1				1		1			1			1				1				1			1				9	
PG-S2-4		1			1			1			1		1		1			1				1			1			9	
PG-S2-5		1		1			1			1			1		1						1			1		1		9	
PG-S2-6		1		1				1		1			1		1						1			1		1		9	
PG-S2-7		1				1		1		1				1			1				1		1				1	9	
PG-S2-8	1				1			1			1			1			1				1			1				9	
PG-S2-9	1			1			1				1			1			1				1			1				9	
PG-S2-10		1		1			1			1			1		1			1				1			1			9	
PG-S2-11	1			1			1			1				1			1				1			1				9	

APPENDIX E.g : DATA ROSTER FOTTECHNOLOGICAL SUPPORT FEATURES * DENOTES MISSING OR SPOILED RESPONSE

PG-S2-12	1			1			1			1			1				1			1		1			1			9	
PG-S2-13	1			1			1			1			1			1			1			1			1			9	
PG-S2-14		1			1			1		1			1				1			1		1			1			9	
PG-S2-15		1			1		1			1			1				1			1		1			1			9	
PG-S2-16		1		1			1			1			1				1			1			1			1		9	
PG-S2-17	1				1			1		1					1		1			1			1		1			9	
PG-S2-18	1			1			1					1			1			1			1			1			1	9	
PG-S2-19	1				1				1		1		1				1				1		1			1		9	
NS-S1-1			1		1			1		1					1	1					1			1			1	9	
NS-S1-2		1			1				1			1		1		1				1			1			1		9	
NS-S1-3	1				1		1				1			1				1			1		1			1		9	
NS-S1-4		1			1		1					1			1			1			1		1			1		9	
NS-S1-5		1			1				1			1			1			1			1		1			1		9	
NS-S1-6		1			1			1			1			1			1			1			1				1	9	
NS-S1-7			1			1		1				1			1			1			1		1				1	9	
X's Selected	34	54	13	34	55	11	38	46	17	55	21	25	29	48	24	26	59	15	20	63	18	36	46	18	28	49	24		
Total Part.	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102		
As a %	0.333	0.529	0.127	0.333	0.539	0.108	0.373	0.45	0.17	0.539	0.21	0.245	0.284	0.471	0.235	0.255	0.578	0.147	0.2	0.62	0.18	0.35	0.451	0.18	0.275	0.48	0.24		
1-N	Telephone Access to the Instructor - Needed											6-N	Bulletin Board Access to the Instructor - Needed																
1-H	Telephone Access to the Instructor - Helpful											6-H	Bulletin Board Access to the Instructor - Helpful																
1-I	Telephone Access to the Instructor - Ideal											6-I	Bulletin Board Access to the Instructor - Ideal																
2-N	Telephone Access to Technical Support - Needed											7-N	Bulletin Board Access to Other Students - Needed																
2-H	Telephone Access to Technical Support - Helpful											7-H	Bulletin Board Access to Other Students - Helpful																
2-I	Telephone Access to Technical Support - Ideal											7-I	Bulletin Board Access to Other Students - Ideal																
3-N	Online Access to Technical Support - Needed											8-N	Chat Line Access to the Instructor - Needed																
3-H	Online Access to Technical Support - Helpful											8-H	Chat Line Access to the Instructor - Helpful																
3-I	Online Access to Technical Support - Ideal											8-I	Chat Line Access to the Instructor - Ideal																
4-N	Email Access to the Instructor - Needed											9-N	Chat Line Access to Other Students - Needed																
4-H	Email Access to the Instructor - Helpful											9-H	Chat Line Access to Other Students - Helpful																
4-I	Email Access to the Instructor - Ideal											9-I	Chat Line Access to Other Students - Ideal																
5-N	Email Access to Other Students - Needed																												
5-H	Email Access to Other Students - Helpful																												
5-I	Email Access to Other Students - Ideal																												

APPENDIX F

Table of Coding Categories for Focus Group Questions

Question	Topic	Code Category	Code Sub-Categories
1	Benefits of AP Course Work	**1.1** Cost	**1.1.A** comparison to university tuition
		1.2 Scholarship Advantages	
		1.3 Preparation for Post-Secondary Study	**1.3.A** increased knowledge
			1.3.B possibility of acquiring university credits
			1.3.C value of exam experience
		1.4 Challenge	
		1.5 Equity of Choice and Opportunity	**1.5.A** access to instruction
			1.5.B equity among schools
		1.6 Self-Paced Study	
2	Concerns About AP Course Work	**2.1** Cost	
		2.2 Time	**2.2.A** negative influence on achievement in school-based course work
			2.2.B competition with time for sports
			2.2.C time - stress
		2.3 Confusion About the Recognition of and Value of AP Course Marks and AP Credits	**2.3.A** lack of understanding about the value of course work toward an AP grade: school and College Board grades
			2.3.B lack of understanding about the College Board requirements for specific courses
			2.3.C lack of understanding about the distinction between AP and provincial curricula
			2.3.D lack of understanding about exam procedures
		2.4 Prerequisite Knowledge	

APPENDIX F

Table of Coding Categories for Focus Group Questions

Question	Topic	Code Category	Code Sub-Categories
3	Concerns About AP in an Online Learning Environment	**3.1** Lack of Social Interaction	**3.1.A** concern about a negative effect on group work
		3.1 Lack of Social Interaction	**3.1.B** concern about peer support for learning
			3.1.C concern about a lack of social learning
		3.2 Student-Instructor Communication	**3.2.A** concern about clarity of student-instructor communication
			3.2.B concern about delays in student-instructor communication
		3.3 Process Questions	**3.3.A** submission of assignments
			3.3.B audio and visual support for learning
			3.3.C lab work
			3.3.D assignment deadlines and homework checks
		3.4 Security of Information	
		3.5 Computer Competency	
		3.6 Access to technology	**3.6.A** at home
			3.6.A at school
4	Comments on Specific Features in an Online Learning Environment	**4.1** Timely, efficient access to academic support via telephone	**4.1.A** Cost
		4.2 Timely, efficient access to academic support via email / bulletin board	**4.2.A** feedback on preliminary work
		4.3 Concerns about academic support in an Online Environment	**4.3.A** impersonal atmosphere in an online environment
			4.3.B concerns about typing/keyboarding skills needed

APPENDIX F

Table of Coding Categories for Focus Group Questions

Question	Topic	Code Category	Code Sub-Categories
4	Comments on Specific Features in an Online Learning Environment	**4.3** Concerns about academic support in an Online Environment	**4.3.C** class size /communication speed
		4.4 Timely, efficient telephone access to technical support	**4.4.A** reliability of Internet access and availability of/ ease of use of support
			4.4.B cost of telephone-based technical support
		4.5 Cost-effective Access to Online Technical Support	**4.5.A** cost of alternative technical support features
		4.6 Student-to-Student Communication	**4.6.A** off-task talk
			4.6.B video communication among students
			4.6.C sharing of still pictures among students
			4.6.D availability of small-group conferences
		4.7 Comparison to existing correspondence programs	

APPENDIX F

F-1: Coded Responses to Focus Group Questions

Q.1 Benefits of AP Course Work

CATEGORY CODE	PARTICIPANT #	QUOTATION
* FG in a participant code denotes focus group identification number		* Codes without FG denote written responses on questionnaires
1.1 COST 1.1.A Comparison to university tuition	SD-S1-FG-3	• I think that AP courses benefit the student a great deal because if it is taken in the school setting, the cost is a lot lower than going to a university or college and taking it.
1.1.A Comparison to university tuition	SD-S1-FG-2	• I know from Computer Science A that if you complete that course with a 4 or a 5 that you can skip out on first year university computer science courses which could alleviate some nice considerable amount of debt.
1.1.A Comparison to university tuition	NO-S1-FG-2	• Yes, save some money.
1.2 SCHOLARSHIP ADVANTAGES	OS-S1-2	• if it helps towards scholarships and those types of things, it would be good.
1.2 SCHOLARSHIP ADVANTAGES	SD-S1-FG-1	• I would just like to say that the AP courses help you get any kind of scholarships.
1.2 SCHOLARSHIP ADVANTAGES	NO-S1-FG-2	• they could help me get scholarships
1.2 SCHOLARSHIP ADVANTAGES	OS-S1-FG-2	• it's for the scholarships • that's a very appealing part
1.2 SCHOLARSHIP ADVANTAGES	PG-S1-10	• I would be able to go to a university of my choice with the scholarship money awarded.
1.2 SCHOLARSHIP ADVANTAGES	SD-S1-FG-1	• any financial support going to university or college would help greatly.
1.3 PREPARATION FOR POST-SECONDARY STUDY 1.3.A increased knowledge	SD-S1-FG-2	• any additional education is great • increase your knowledge • obviously increases your knowledge • preparing you for university is great
1.3.A increased knowledge	SD-S1-FG-3	• also it prepares you for the next level of learning after high school
1.3.A increased knowledge	NO-S1-FG-3	• it would definitely benefit me as I'm trying to get into university
1.3.A increased knowledge	OS-S1-2	• it might prepare me better for university

F-1: Coded Responses to Focus Group Questions

1.3.A increased knowledge	PG-S1-9	• I think they would be helpful because ... I'm afraid I won't be prepared for university.
1.3.B possibility of acquiring university credits	OS-S1-FG-1	• course requirements toward university, it would be a good thing
1.3.C value of exam experience	GV-S1-5	• The experience of the exam should help in post- (high school) graduate studies.
1.4 CHALLENGE	OS-S1-FG-1	• it would make it quite a bit more challenging
1.4 CHALLENGE	PG-S1-9	• they would be helpful because I don't have to try very hard in school to get really good marks
1.4 CHALLENGE	PG-S1-10	• it would give me a challenge
1.4 CHALLENGE	GV-S1-1	• I feel that my AP course has helped me because the work is much more challenging than regular English.
1.4 CHALLENGE	GV-S1-2	• taking AP course would benefit me because it is a chance to be more challenged compared to the usual BC curriculum
1.5 EQUITY OF CHOICE AND OPPORTUNITY 1.5.A Access to AP instruction	SD-S1-FG-1	• we are a very lucky school and we have AP's • But what about all the other schools that don't? • I think that the Internet is a good way to go.
1.5.A Access to AP instruction	OS-S1-FG-2	• these courses have a lot of information in them that you wouldn't be able to access otherwise • they have some very valid stuff that isn't offered here
1.5.A Access to AP instruction	OS-S1-FG-1	• not offered anywhere else • you want to get these courses
1.5.A Access to AP instruction	OS-S1-FG-3	• small schools that don't have the courses • don't have the numbers for the course to be offered
1.5.A Access to AP instruction	NO-S1-FG-2	• we don't have many AP courses to choose from • this would give us more choices and maybe an opportunity to do well in life
1.5.A Access to AP instruction	NS-S1-3	• I feel that this course would help me because at the moment I have no other option but to just teach this to myself.
1.5.A Access to AP instruction	PB-S2-6	• especially for people who don't have room in their timetable for AP
1.5.A Access to AP instruction	GV-S1-3	• I would personally prefer to take AP courses in a classroom setting rather than online, although I recognize the advantages of offering them online is they are otherwise unavailable.
1.5.B Equity among schools	OS-S1-FG-3	• this would definitely help small schools
1.5.B Equity among schools	NO-S1-FG-3	• it's a good way to get people in smaller towns an option to look at broader topics
1.5.B Equity among schools	NO-S1-FG-2	• especially for people in smaller towns

F-1: Coded Responses to Focus Group Questions

1.6 SELF-PACED STUDY	GV-S1-1	• I think that taking AP courses through the internet are a good idea because a student can complete the course completely at their own pace.
1.6 SELF-PACED STUDY	OS-S1-FG-3	• you could work at your own pace • you're working on your own time
1.6 SELF-PACED STUDY	OS-S1-FG-4	• you work at your own pace

Q. 2 Concerns About AP Course Work

CATEGORY CODE	PARTICIPANT #	QUOTATION
* FG in a participant code denotes focus group identification number		* Codes without FG denote written responses on questionnaires
2.1 COST	SD-S1-FG-3	• some people are in financial, bad financial situations • it could be hard for them to pay for these courses
2.1 COST	OS-S1-FG-2	• it's rather expensive • not as many people would be able to afford it
2.1 COST	OS-S2-2	• one concern that I would have would be the cost
2.1 COST	PG-S1-10	• they need to think more about the price • make it more affordable to students
2.1 COST	PG-S2-17	• spending $740 and possibly fail the exam or finding the course too hard • some way to get out of it if you don't like it is needed
2.1 COST	GV-S1-1	• The reason why I'm not taking the AP English exam is that I can't afford it.
2.1 COST	GV-S1-2	• The only concern that I have about taking one or more AP courses is the cost of these courses
2.1.A COST	SD-S1-FG-3	• some people are in financial, bad financial situations • it could be difficult for them to pay for these courses • I think government funding is a good idea
2.2 TIME	GV-S1-2	• finding the time to maximize the opportunity
2.2 TIME	SD-S1-FG-3	• most people in the Grade 12 level that are taking these AP courses have busy schedules • this just adds another ... time constraint
2.2 TIME	SD-S1-FG-2	• the only concern that I had about taking an AP course was just the time factor
2.2 TIME	OS-S2-8	• it's hard to say what time-frame I'd fit [it] into
2.2.A negative influence on achievement in school-based course work	NO-S1-FG-2	• it might affect your other courses ... normal ones • you wouldn't do as well if you didn't have as much time for those ones
2.2.B competition with time for sports	NO-S1-FG-4	• it takes a lot of your time • if you have anything else outside of school, like if you're in basketball or any other sports, it would take up a lot of your time

F-1: Coded Responses to Focus Group Questions

2.2.B competition with time for sports	NO-S1-FG-1	• I'm really into tennis and different sports • I find it hard enough with some of the courses I'm taking right now • it would be kind of hard to fit everything in
2.2.C TIME -stress	NO-S1-FG-3	• taking more than 2 AP courses might just make you go insane
2.2.C TIME -stress	SD-S1-FG-3	• this just adds another pressure
2.3 CONFUSION ABOUT THE RECOGNITION OF AND VALUE OF AP COURSE MARKS AND AP CREDITS **2.3.A lack of understanding about the value of course work toward an AP Grade: school and College Board grades**	OS-S1-FG-1	• So the assignments are worth some part of your mark, right?
2.3.A lack of understanding about the value of course work toward an AP Grade: school and College Board grades	OS-S1-FG-4	• That (AP) wouldn't show up on your transcript? • Do you have to take the school course, plus the AP?
2.3.A lack of understanding about the value of course work toward an AP Grade: school and College Board grades	SD-S1-FG-2	• That's what universities look at. They look at your exam mark? • Or is it part course work, part exam? • So that people can't get … a smarter person than them to write their course and then do the exam, bomb that, and still get like a 2 or 3?
2.3.A lack of understanding about the value of course work toward an AP Grade: school and College Board grades	SD-S1-FG-1	• It's (a course or an assignment mark) not that important. It's just kind of bonus marks for you?
2.3.B lack of understanding about College Board requirements for specific courses	SD-S1-FG-4	• But what about something like Art drawing or Art General? As far as I know there isn't an Art exam at this school.
2.3.C lack of understanding about the distinction between AP and provincial curricula	OS-S1-FG-1	• Do you get a bit of a credit for university?
2.3.D lack of understanding about exam procedures	SD-S1-FG-4	• So, [you write the exam] at home, right?

F-1: Coded Responses to Focus Group Questions

2.3.D lack of understanding about exam procedures	SD-S1-FG-2	• Does the course mark depend solely on the exam?
2.4 PREREQUISITE KNOWLEDGE	OS-S1-FG-1	• There are some courses, like you can take Calculus here, and so there is Calculus Advanced Placement, but there is also a bunch of courses that really had no back-up in the school. I know some schools offer different types of courses, so where would they base their, sort of what everybody has to know to start the course from?

Q. 3 Concerns About AP in an Online Learning Environment

CATEGORY CODE	PARTICIPANT #	QUOTATION
* FG in a participant code denotes focus group identification number		* Codes without FG denote written responses on questionnaires
3.1 LACK OF SOCIAL INTERACTION	SD-S1-FG-1	• most people in society need other people to thrive, including me • I love talking to people
3.1 LACK OF SOCIAL INTERACTION	SD-S1-FG-2	• If it's supplemental, if it's one AP course, two AP courses... they would still be coming to school for your regular courses ...
3.1.A concern about a negative effect on group work	OS-S1-FG-2	• I know in chat rooms and that kind of thing, you can get there and write stuff up, and but it's still hard to get everybody's idea heard • when you're sitting in a group, it's easier to tell how people are feeling • if there's some sort of argument or if you can't quite decide, you can tell how people feel because you can see it on their face • it's harder to make sure everyone feels included • you never really know if someone's afraid to say, "You know, this isn't what I want to do."
3.1.B concern about peer support for learning	NO-S1-FG-2	• it would be harder to get help from your peers
3.1.C concern about lack of social learning	SD-S1-FG-3	• a part of learning is learning to interact with teachers and students in, maybe, a high-pressure setting • I think interaction is good for people • I think that human interaction is best, is a huge part of learning • I would think that at least half of it comes from seeing what other people do. You get ideas from them. • You sort of need some human touch • it's the whole interaction when you can talk to them and you're seeing them and body language and that kind of stuff that's not displayed over the Internet

F-1: Coded Responses to Focus Group Questions

3.1.C concern about lack of social learning	GV-S1-2	• Taking an AP course through the Internet is a great idea, but should not take over usual academics, as a classroom environment is an important way to learn as well.
3.1.C concern about lack of social learning	GV-S1-3	• I would personally prefer to take AP courses in a classroom setting ... I would very much dislike to see online courses replacing regular courses.
3.2 STUDENT - INSTRUCTOR COMMUNICATION 3.3.A concern about clarity of student-instructor communication	OS-S1-FG-2	• I am just used to ... having the teacher and being able to go up and just ask them face to face and explain it that way • sometimes you just need to talk to the them • to talk to the teacher and have that kind of reassurance
3.2.A concern about clarity of student-instructor communication	OS-S1-FG-4	• I need a person-to-person kind of contact to understand some things
3.2.A concern about clarity of student-instructor communication	OS-S1-FG-2	• If you can have that kind of direct access to the teacher and to asking questions ... that would be really important • if there is things you don't understand, then who are you going to ask?
3.2.A concern about clarity of student-instructor communication	PG-S2-6	• I just worry that I wouldn't be able to ask questions or make clarifications through the Internet when I needed to - like in a classroom.
3.2.B concern about time delays in student-instructor communication	NO-S1-FG-4	• If all of a sudden you had a question, you would have to write it down, or I don't know keep it in your mind until you were on the Internet and able to write your teacher
3.2.B concern about time delays in student-instructor communication	NO-S1-FG-3	• you might have problems sending back and forth ... getting back and forth might be two or three days between, you know, corresponding with the person on the other side
3.2.B concern about time delays in student-instructor communication	NO-S1-FG-3	• technology isn't perfect • computer crashes
3.3 PROCESS QUESTIONS 3.3.A submission of assignments	OS-S1-FG-1	• How would it work over the Internet? • How would you do tests and how would you get your assignments across?
3.3.A submission of assignments	SD-S1-FG-4	• You would still be handing in your course work [through the Internet]?

F-1: Coded Responses to Focus Group Questions

3.3.B audio and visual support for learning	OS-S1-FG-3	• I am wondering about the Spanish course. How are you going to offer the audio part of it? • It would be multi-media? • Will there be teleconferencing?
3.3.B audio and visual support for learning	NO-S1-FG-1	• If I were to take an AP course, it would probably [be] Spanish Language or something, and I find it easier to learn languages, hearing it...
3.3.B audio and visual support for learning	GV-S1-3	• I am also somewhat concerned with language programs being offered online as I find that conversational skills can only really be practiced with other student and instructors.
3.3.B audio and visual support for learning	0S-S1-FG-2	• For some courses, like Spanish, ... it's very important when you're learning a language ... that you can have that sort of oral talking and listening.
3.3.C lab work	NO-S1-FG-4	• I'd actually consider Biology if it was available, but how would you [do] ... experiments? • Your lab work, that would be kind of hard, don't you think?
3.3.D assignment deadlines and homework checks	SD-S1-FG-1	• if they have deadlines, and check it, that might make it better for people who procrastinate or who don't have the discipline to do it on their own
3.3.D assignment deadlines and homework checks	SD-S1-FG-2	• if you're not under someone else's supervision, you could easily slack off and put it off
3.4 SECURITY OF INFORMATION	SD-S1-FG-4	• I have yet to find a security system that didn't have a way behind it, like a back door. • If you can make it, you can break it.
3.4 SECURITY OF INFORMATION	SD-S1-FG-2	• if they ... have a code or whatever, say some people could give this out to anybody over the Internet • sort of like stealing maybe
3.4 SECURITY OF INFORMATION	SD-S1-FG-1	• freeloaders coming in and using the system
3.5 COMPUTER COMPETENCY	OS-S1-FG-4	• I'm not that great at computer knowledge • I don't really know how to use it that much • Would there be some kind of availability of instruction?
3.6 ACCESS TO TECHNOLOGY 3.6.A at home	SD-S1-FG-2	• [If] you don't have a computer at home, and I guess if you were to write it all up and you would have to type it all out again, so it would be difficult
3.6.B at school	SD-S1-FG-2	• [If] you don't have time to be in the computer lab because you only have one hour a day, or an hour and a half maybe, then how would you work around that? • our computer lab closes at 4 o'clock
3.6.B at school	SD-S1-FG-1	• If we are using the computer lab at school, that also means you have to have a teacher supervisor there because we're not allowed in any rooms without teachers or supervisors.

F-1: Coded Responses to Focus Group Questions

Q. 4 Comments on Specific Features in an Online Learning Environment

CATEGORY CODE	PARTICIPANT #	QUOTATION
* FG in a participant code denotes focus group identification number		* Codes without FG denote written responses on questionnaires
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	NO-S1-FG-4	• For me it would [be helpful] • if you have to hear things more than once, it would be easier to just ask some … and have a response right away • I know it would be for me.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	NO-S1-FG-3	• you don't absolutely need it, but it would be nice • It would make it a little more easier.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	NO-S1-FG-2	• I think that telephone access to the instructor would also be good.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	OS-S2-2	• it is especially important to have access to your instructor by telephone
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	SD-S1-FG-2	• I would like telephone access. • I would say it is very essential. • Where if I was in school, perhaps, I could just ask the teacher, so there has to be some sort of direct, instantaneous communication with somebody, so that you can ask them a quick question. • telephone access would be the most important
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	SD-S1-FG-3	• Yes, it is essential.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	SD-S1-FG-1	• For dummies [people who are not comfortable with technology] telephone access would just be, like, very necessary

F-1: Coded Responses to Focus Group Questions

4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	OS-S1-FG-2	• I feel that's really important because if you can't see them face to face, at least you can, you know, have that kind of ongoing conversation.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	OS-S1-FG-4	• just the verbal interaction • just to make sure they understand, and maybe, if you have a question or something
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	OS-S1-FG-1	• I think that's very important, especially if you have a question • it's kind of hard to discuss with somebody on the Internet • you can have that sort of question-answer, question-answer, but you can't have an actual discussion on different concepts • So if you're not really understanding, I don't think the Internet is the best place to get help. • if you were able to phone up at a certain time and say, "How do I do this?" • then it could be explained a lot easier
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	OS-S1-FG-3	• maybe they can do both [telephone and email] ... you can talk to the instructor while he is showing you over the Internet how to do the question ... that way you get both the audio and the visual help.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	PG-S1-10	• I believe telephone access [is] necessary.
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	GV-S1-1	• I think that it is very helpful to have ... telephone access to an instructor ... because if one needs help they need to be able to contact someone. • as long as there was telephone access to the instructor
4.1 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA TELEPHONE	GV-S1-2	• I am ... taking a course through the Open School using videos and print material. I find that I often have questions and need to call my tutor to explain them. This is an essential aspect in creating online courses.
4.1.A cost	NO-S1-FG-2	• I know lots of calls are long distance ... if it's free, that would be cool.

F-1: Coded Responses to Focus Group Questions

4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	OS-S1-FG-1	• I think that that's really important. • any way you can have access to your instructor is going to be the best • to be able to get in touch with him [by] email and … through the bulletin board … can only help with learning
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	OS-S1-FG-4	• I feel the exact same way as Participant #1.
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	OS-S1-FG-3	• Same thing.
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	PG-S1-9	• I think that bulletin board and email are necessary for communication
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	PG-S1-10	• email [is] necessary • The bulletin boards are probably extremely necessary.
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	GV-S1-1	• I think that it is very helpful to have … email or bulletin board access to an instructor … because if one needs help they need to be able to contact someone.
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	OS-S2-2	• I think that it is important to have access to your instructor by … email especially.
4.2 TIMELY, EFFICIENT ACCESS TO ACADEMIC SUPPORT VIA EMAIL and/or BULLETIN BOARD	OS-S1-FG-1	• If you had to put … "What does this mean?" on a bulletin board, and they told you five hours later, it's not particularly useful.
4.2.A feedback on preliminary work	NO-S1-FG-4	• It think [posting draft work on a bulletin board] would be a really good idea because it's good to have …working up to date …kind of what your teacher thinks about your project

F-1: Coded Responses to Focus Group Questions

4.2.A feedback on preliminary work	NO-S1-FG-2	• I think that a teacher's input while you're working on something is important to make sure you're on the right track.
4.2.A feedback on preliminary work	NO-S1-FG-3	• I agree. It's always nice to know ... whether you're wasting your time or whether you're doing a good job and you should continue working like you are.
4.3 CONCERNS ABOUT ACADEMIC SUPPORT IN AN ONLINE ENVIRONMENT **4.3.A impersonal atmosphere in an online learning environment**	OS-S1-FG-2	• I have a lot of doubts about this online instruction and teaching • in time... with the videos [teleconferencing] [when] you can see everybody and... you can have conversation, then it can carry on... • I think it would be hard for a lot of people to adapt. • the kind of communication you can have with the teacher one-on-one... they're trying to recreate it, but I just don't know if it would work
4.3.A impersonal atmosphere in an online learning environment		• it's so impersonal with our technology right now • seeing it on the screen; it's so impersonal
4.3.A impersonal atmosphere in an online learning environment	SD-S1-FG-3	• even though this is an attempt to... make the ... virtual learning more accessible and more personal... it's a feeble attempt and it will not work.
4.3.B concern about typing/keyboarding skills needed	SD-S1-FG-3	• if your typing skills aren't fluent it's almost impossible
4.3.B concern about typing/keyboarding skills needed	SD-S1-FG-2	• if you can't type fast enough ... [bulletin board or chat line messages will] already have gone past before you can answer
4.3.C class size/ communication speed	SD-S1-FG-2	• if the whole province is online, doing AP online, then you will have a considerable amount of people in one place [at one Internet site] at one time • you would have a lot of traffic
4.4 TIMELY, EFFICIENT TELEPHONE ACCESS TO TECHNICAL SUPPORT **4.4.A reliability of Internet access and availability of /ease of use of support**	NO-S1-FG-2	• I think that would be necessary because we have Internet access at home and we ... call that number quite a bit when we can't get on for some reason, so I think that you are going to run into more problems with doing a course on the Internet. • I think that telephone access would be ... handier than [online help].
4.4.A reliability of Internet access and availability of /ease of use of support	NO-S1-FG-4	• we have the Internet [at home] • we've had weeks, at times, where we couldn't get through on the Internet • I've had to call technical support to get help. • I'd never have been able to get out of it without the technical support, so it's necessary.

F-1: Coded Responses to Focus Group Questions

4.4.A reliability of Internet access and availability of /ease of use of support	NO-S1-FG-3	• it would be really nice to have someone who knew a little more than you about that sort of thing to be able to help you if you run into a problem. • if you can use the telephone, it's a lot easier... email isn't perfect
4.4.A reliability of Internet access and availability of /ease of use of support	NO-S1-FG-1	• I think that using the telephone would be a lot handier [than online help].
4.4.A reliability of Internet access and availability of /ease of use of support	SD-S1-FG-1	• telephone access would be recommendable because if you can't get on the Internet, you can't get help getting on. • for people who aren't really sure, [telephone access] might help them ... if they really don't know what they're doing with computers
4.4.A reliability of Internet access and availability of /ease of use of support	SD-S1-FG-3	• people would be stuplified by a simple error ... if they had never used a computer on the Internet before
4.4.A reliability of Internet access and availability of /ease of use of support	SD-S1-FG-2	• if you can't get the Internet to work, how are you going to get on to ask a question?
4.4.A reliability of Internet access and availability of /ease of use of support	OS-S1-FG-3	• you would probably need the telephone because you might not be able to run the program to start ... to go over the Internet
4.4.A reliability of Internet access and availability of /ease of use of support	OS-S1-FG-2	• for those people who don't understand computers, you would probably need the telephone
4.4.B cost of telephone-based technical support	SD-S1-FG-4	• If you're going to have telephone access, it should be in that general area where you're located. That way it would keep the cost down.
4.5 COST-EFFECTIVE ACCESS TO ONLINE TECHNICAL SUPPORT **4.5.A cost of alternative technical support features**	SD-S1-FG-2	• Online [help] would be a heck of a lot cheaper ... you've always got to think about money. • [Telephone access] shouldn't be the life-blood. There should ... be a fallback system, that if you can't do anything else, then you can phone somebody, but otherwise if I can't figure out how to work this new program I got, or how to open this file that I don't know how to support, the you could just go through an FAQ or something or a search engine to find your answer.
4.5.A cost of alternative technical support features	SD-S1-FG-3	• you could probably just get an *AP Internet ... for Dummies* book ... figure it out with just instructions
4.5.A cost of alternative technical support features	SD-S1-FG-4	• if it's just something with your computer, your connection, it should be something local. • once you're online, there is like IRC and ICQ and all these programs • there is always somebody online

F-1: Coded Responses to Focus Group Questions

4.6 STUDENT-TO-STUDENT COMMUNICATION **4.6.A off-task talk**	NO-S1-FG-4	• I think it's kind of good to talk to people in your classes. • if it's in a political class and you're telling them what you think about the world, and they don't even know you, you haven't even met them … I think it would be good to … meet them in a way. • if you have class discussions, you'd know who you're talking to
4.6.A off-task talk	NO-S1-FG-3	• [off-task chat with peers] would make it a little more easy to talk [about task-related topics], more relaxed.
4.6.A off-task talk	NO-S1-FG-2	• I agree.
4.6.A off-task talk	NO-S1-FG-1	• I agree with the other two … you could make new friends.
4.6.B video communication among students	OS-S1-FG-2	• [exchange of video images] would help a lot
4.6.B video communication among students	OS-S1-FG-4	• that [exchange of video images] would help a lot
4.6.B video communication among students	OS-S1-FG-3	• just a little [video] camera, so that you can see each other
4.6.C sharing still pictures among students	SD-S1-FG-1	• talking is not necessarily enough • even if you could put up a picture, it would be better • to see what everyone else looks like … would help
4.6.D availability of small-group conferences	SD-S1-FG-1	• so maybe you don't have 30 people, that if you have five people that you really get to know, and you might want to talk to them more • to have a smaller chat room; you'd get to know the people • if you did type slower, maybe they would wait for you
4.6.D availability of small-group conferences	SD-S1-FG-2	• it should be expandable enough, say you wanted to take five of your buddies, say you were working on a project together … you could open up a window … so there was an opportunity to selectively group people
4.7 COMPARISON TO EXISTING CORRESPONDENCE PROGRAMS	SD-S1-FG-4	• I've done correspondence, and I think it would be better than that • that [correspondence] you have to do all by yourself and there isn't a teacher • this would be a lot better option for courses you can't take in [your] high school

F-2.a: SD-S1 Focus Group Transcripts

OPENING NOTE: The following focus group included three males and one female. All were Grade 12 students. One male participant had not enrolled in or experienced AP work, but each of the others was working toward a May, 1999 AP exam. Seven AP courses were supported through AP groupings within regular course blocks at this school at the time of the focus group interview. Students in AP groupings received addition instruction and AP exam preparation while enrolled in regular courses.

Myself: Ah, the 13th of April, it is Tuesday morning and we are at ... and we have four participants for a focus group and we are just about to begin looking at some of the questions. Number 1: Do you feel taking AP courses would benefit you? Again, these are AP courses in any setting at all. Why or why not? We'll start with participant #3.

Participant #3: Hi, I am Participant #3 and I think that AP courses benefit the student a great deal because if it is taken in the school setting the cost is a lot lower than going to a university or college and taking it. And also it prepares you for the next level of learning after high school.

Participant #2: Um, Participant #2 would like to say that any additional education is great ... um, be it AP or any other course, um, that helps to, I guess, increase your knowledge. Um, preparing you for university is great because I know from Computer Science A that if you complete that course with a 4 or 5 that you can skip out on first year university computer science courses which could alleviate some nice considerable amount of debt.

Participant #1: Um, Participant #1, I would just like to say that the AP courses help you get any kind of scholarships. And any financial support going to university or college would help greatly.

Participant #4: Participant #4 disagrees. If you take an AP course right now, then that gives you that little bit of an edge to get to the next level and you have an advantage over other people, but if everybody is given the choice to take these courses, everyone is going to have that level of ability and what's going to get you farther than that? Like right now if you take an AP course, you're ahead of other people, but when everyone has an AP course, then what?

Myself: That's a very good point.

Participant #3: I guess that would make a grade 13 or something.

Myself: Well what, what it would do is sort of level out the playing field, and it would lead back to an actual measure of your work, instead of a measure of your opportunity.

Participant #4: But couldn't we get the same effect by just removing all of the AP courses, then enhancing what we already have?

Myself: Well, you're right, and of course that would be, that would be very, very practical. The only ... if the decision were left to school boards, if decisions like that were left to schools, that would probably be, um, a possibility, but these decisions are in the hands of universities and they work on a very competitive basis. So, yes, you are right. In the real world, I don't think it's going to happen. That is my response to your question. I don't know how other people would respond.

Participant #1: OK, Participant #1; I disagree with participant #4. Well, I find that we are a very lucky school and we have and we have AP's. But what about all the other schools that don't? So we're going to give up our opportunities for the schools that don't have the funding. So I think that the Internet is a good way to go.

Participant #2: Um, Participant #2 would like to say that the fact of taking an AP course could, well, it obviously increases your intelligence, and even if everybody is forced to take an AP course to compete, then why not have a bunch of smart people running around with a better education than most other countries, making Canada very competitive intellectually-wise for compared to the entire world?

Myself: OK, does anyone have any further comments on Question #1? ... No, that's it.
OK, question # 2: Do you have any concerns about the idea of taking one or more AP courses? Any concerns about what that would cost you in terms of time or commitment or whatever?

Participant #3: Participant #3 would like to say that, ah, most people in the Grade 12 level that are taking these AP courses, um, have busy schedules. Usually their, their course load is full or almost full, and this just adds another pressure and time constraint to the whole deal and so it's sort of hard to do. And also some people are in financial, bad financial situations, ah, it could be hard for them to pay for these courses, so I think government funding is a good idea.

Myself: OK, thank-you.

Participant #1: Participant #1, I would just like to say that taking the AP courses shows like a certain amount of , like, responsibility, and, um, people have to know when their limit is. Like, don't sign up for three AP courses if you have a job and a full work load. You won't, like, it won't help you at all.

Participant #4: Participant #4 has no concerns.

Participant #2: Um, Participant #2 would just like to say that the only concern that I had about taking an AP course was just the time factor of when could I do this, and I had to rearrange my schedule so that I could take the AP course that I wanted to, and that was the only concern that I ever had, was just about time; that's if I could or I could not.

Myself: Um, hum. That's a very common concern. ... Um question #3 then. Do you have any questions or concerns about the idea of taking one or more AP courses in an Internet setting? In other words, does ... Do concerns that you have change or increase once you move it from a classroom-based setting into an Internet setting?

Participant #3: Uh, Participant #3 would like to respond to that question. Ah, I find; ah I am sort of against the whole idea of having people learning at home because, ah, part of learning is learning how to interact with teachers and students in, maybe, a high-pressure setting; whereas, at home you have all day to do your course. You have no, no one looking over your back, making sure you're not playing computer games or something. And instead, I'd rather people took it at school because I think it's, ... um, I think interaction is good for people. It makes them learn just as much as learning $E=MC^2$.

Myself: Good point.

Participant #2: Participant #2 would just like to question the whole idea about, uh, how would this be regulated. Since it might be subsidized by the government, it would be a shame if somehow American students or anybody overseas could somehow access the information we have as British Columbian citizens, I guess... meaning that, ah, if they say we we're, um, we have a code or whatever, say some people could just give this out to anybody over the Internet so that they could have the same... They could use our system to benefit themselves without putting any money into it. Just as, ah, sort of like stealing, maybe.

Myself: there have been all sorts of concerns, security concerns, ah, brought up. A significantly well-monitored and reasonably often-changed password system - an encryption system, would have to be part of the system. I don't know if you had a chance to check out, um, the APEX ...[site]. You must have because you picked up the $395 price.

Participant #1: No.

Myself: You didn't get that off the APEX [site]? The one under, the Sites to Visit on the web site. One place you could go was APEX. The competition, by the way, is Paul Allen. Do you know who Paul Allen is?

Participant #4: Um, it rings a bell. I can't remember.

Myself: Yeah, he used to be Bill Gates' partner.

Participant #4: Oh, that's right.

Myself: They started out together. He owns a company called APEX in the United States and they are the competition. They've got five of these (I think you might be able to take US History, if you want, from Paul Allen). Um, they've got five of these courses available this semester and I think that next year they've got two that they're adding to that, and they, they're going to be developing these for American students, and they're offering these according to what American students want. Um, and they have very carefully crafted system, so that other students who, because there are so many American students taking AP courses, so they can't get in and borrow all of the APEX stuff without paying for it, so there is a way of doing it. It takes a certain amount of up-keep because you can't just give a person a password and then that's it, you're great. There is a certain amount of up-keep that would be involved. Ah, of course, some information will be shared. You have got to remember too, that if you're going to be an AP student doing online research, you're going to be sharing information that other people have...

Participant #4: Right.

Myself: all over the world. So sharing a little back...

Participant #4: I was just wondering, like freeloaders coming in and using the system...

Myself: Yeah, ah, the thing is they can't get any credit. Right, I suppose, no one really can. You write the exam and then off you go, right, but um... No, it won't be that open. There'll be some protection there.

Participant #1: Um, I just like to say, it may be more convenient to take it on the Internet because, um, if you have four classes at a school and that's the amount you can take, then to come in the morning, to go in at lunch, and to go in after school, makes for a really long day and by the end you're too tired. If you go home and it's more relaxed, it might, ah, make it easier for you.

Participant #2: Participant #2 would just like to say that it could also make it very, too easy for you, and if you're not under some else's observation, you very easily could slack off and put it off. I know my brother tried to do, you know, ... actually my brother and my sister tried to do Grade 12 Math by correspondence. My sister took three years to finish it after she graduated, uh, because she just said, "Ah, I'll do it tomorrow." Right, just procrastinated and never really got it done, but eventually she had to or else they would revoke her graduation or something. I don't know what they were going to do, but they were going to do something just to make her do it.

Participant #1: Well, if, oh, Participant #1, if online they make you, like, they check your homework or something like that, then it's more pressure, and like, if they have deadlines and check it, that might make it better for people who procrastinate or who don't have the discipline to do it on their own.

Participant #2: Um-hum.

Myself: Ah, just to comment on that... In fact, there, you'll be, you'll be right next. Because of what you said sort of raises a question of it could be.. or it could be... There is an instructional design format that is in place at the Open School and that same instructional design format would be used for these programs. It involves individual lessons that are part of modules that are part of sort of units of information. Where there is some flexibility within a unit, there isn't much flexibility between units. And of course, when you start an AP exam [course] you know, I am writing May 6th or I am writing May 8th or whatever the date is. You know that, right? And so the course will be designed so that each unit will be completely covered and there

will be a little review time left. And yes, you'll probably be getting messages from your online tutor, saying, "And assignments four through seven are?" Maybe by phone. Maybe just email. It would depend on ...

Participant # 2: There would have to be long distance phone calls and stuff?

Myself: Yeah, there would have to be an 1-888 line or something like that. Yeah.

Participant #3: OK, Participant #3 would like to say, ah, that even though, this, the Internet would make, ah, AP courses a little easier for the students because they won't have the certain time constraints in school, but I am sort of just wondering if that is a bad thing because, ah, when you actually get into the real world in, you know, five or ten years, people aren't going to make it any easier on you and they won't, you know, they won't let you, ah, take a little longer for your assignment or give you a further deadline. I has to be done right away and that's it. Or else you fail and you won't be successful or make money or you get fired.

Myself: So you're saying that, um, sort of developing realistic work habits early is probably a good thing as opposed to a bad thing.

Participant #3: Yeah, I think the school setting is perfect for that and doing it at home, at your own pace or whatever is not as good, I don't think.

Participant #2: Yeah, there would have to be some sort of timeline or there would have to be something in place to make you do it because ... human nature, if you don't have to have it done, why bother, right?

Myself: Well, the deadline would be there. There just wouldn't be a physical body to say, "Your essay is...?" You know, that sort of thing.

Participant #1: I would just like to say that, um, it is kind of the same as homework. Like, you don't have to; you can procrastinate, but you have to have the determination and the discipline to do it.

Participant #2: Participant #2 would just like to add, just a comment about the help that you could receive. I know , um, if I am stuck in a bind, trying to write a computer program, that it is very useful to talk to somebody. And be it fellow students, I don't know how well it could be done with the Internet, say through a chat room. It would take a lot longer because you would be typing everything out instead of talking. Um, I am sure it couldn't be done through phone lines because that would be a horrendous bill. I am sure the Ministry won't want to pick that up, so I am just wondering how convenient is it to, um, get help when you need it?

Myself: Um, that is a very common question. It was a very prominent one in the feasibility -the pilot- of this study. I have taken... Let's see... approximately two years of university-level course work by distance education. I started when you did your written assignments and put them in the mail. And it took three weeks (I was working through the University of Waterloo), it took three weeks for them to get to Ontario, then two weeks for them to mark them, and then three weeks for them to get back in the mail.) Meanwhile, I had to do more assignments, so often there was a considerable a mount of time. I went from that to studying at the University of Athabasca, where I did have, um two hours a week during which I could phone the tutor. And 1-888 numbers, they pay a much lower rate; it's not so bad as you might think. And we got, through Athabasca, we also got all the lectures on audio tape. Right to... I was studying online, uh, I was working on a Masters of Science through Boise State in Idaho. We did online web board. Ah we did online... Let me try that again. We got online, off-net, um, asynchronous communication. So what you do, is you post your stuff to the bulletin board, and somebody might get back to you in five minutes, and somebody might get back to you in ten, but no one ever took more than 24 hours to get back to you. That was the maximum amount of time - no minimum. It depended on who knew what and where they were and what they were doing. So there would be asynchronous communication built into this. There would also be some synchronous communication. So there would be, like, a chat room where you could go and post stuff... if, check and see who is there and if someone is there who you think would be able to help answer your question, fine. And

again, I do think there would have to be some sort of telephone access to the instructor because some times you just have to talk it through.

Participant #2: Right.

Myself: Because sometimes, by the time you get it all written down, it is not quite what you wanted to say. And then you don't quite get the answer back and then you explain it again. Whereas, a quick conversation often can solve that sort of thing.

Participant #1: I just wanted to agree with Participant #2 that, um, typing things doesn't always get the same reaction as if you actually see the code because there may be 400 lines of code [programming code] and you don't know where the mistake is and you're not going to type it all in because, you know, that would take you forever. Um, and what happens if you call the tutor and they're talking to somebody? Like, will there be numerous lines or will there be numerous tutors or ...?

Myself: There would be something sort of like a call-waiting kind of set-up where they would at least know that you are there, or probably voice-mail. It would probably be a voice messaging system, so that when they hung up the phone... if their contract said that they would spend five hours a week talking to students on the phone, as one support for learning, then they would have these five hours a week, say maybe two hours on Wednesday and Monday night and one hour on Friday morning, or something like that. And then, um, so they would have a messaging service in order to ensure that they got back to all of the incoming calls as quickly as possible.

Participant #2: Right, if it was set up properly, then I have no .. if it was set up properly, um, I wouldn't have a problem with that. I am just worried if it wasn't set up properly, and they take away the AP courses in school, that were of the same value, but then you try to do it on the Internet and you find that it .. it .. exceedingly hard to do it. If it was almost impossible to get your assignments in on time and they were just riddled with mistakes and you did not have the one-on-one communication with the professor that you needed because he was always busy, or say they only put one for the entire province. I don't ... something... cutting corners for budget-wise... because budget is a concern always. Which is wondering, if it wasn't done properly, it could be worse than if it was just left alone.

Myself: Very good point. One assurance that I have is that I have looked at all of the previous work - a lot of the previous work that has been done through the Open School and it is high-quality stuff. If you go through the web site I showed you and take a look at what they have done with [the] Technology 11 course, for example, it is really quite impressive. Um, secondly, I hope this never replaces what's going on in schools. I ... In my view, what this is, it's an opportunity where none exists - not an opportunity of replacing one kind of, ah, instruction with another kind of instruction. It's about adding opportunities, not taking them away.

Participant #2: What happens if... On the flip-side, like, on the flip side, what happens if it exceeds ... say online tutoring is the best way to go, and it just pales in comparison to what you can get at school, information-wise, say new technology-wise? If it pales in comparison, is there a possibility to not do it at school, but then always do it through online?

Myself: I think that's the kind of question that a lot of educators are asking about a lot of courses. And I don't think that there is a, um, a sure answer to that at this point in time.

Participant #3: Participant #3 would like to say that Participant #2 had a very valid statement or, uh, question or whatever that was there. Um, I just, like I said before, um, I think that human interaction is the best, is a huge part of learning and like Participant #2 said, if we move away from that, the we will be book-smart, but will we know how to interact with people? And how will we ever be able to get jobs in big companies, if you just sat around, sat behind a computer your whole life and never talked to anyone, except just typing away? Um, it's sort of ruining the strongest survive thing because if our population becomes weak, if we won't be able to talk to anyone, then we are going to go down in flames kind of thing.

Participant #4: A very valid point Participant #3.

Myself: Well, you know, have touched on something twice now that, that was the most hotly discussed in the, ah, in the pilot study, and that's the question of social interaction. Social interaction -social interaction, especially when social interaction is taking place in a high-stress setting like an AP course where everybody is trying to work toward that final exam - sometimes it's the support amongst the group members that gets a lot of the weaker group members or less confident group members up to speed and going and get some through, right. Anybody in an AP class has watched that happen, and the question about whether that can be duplicated online is significant. And the question about whether what kind of skills, human skills, do you attain while studying online - once we have the technology moved to the point where, um, real learning communities can be formed online, where there is audio-video interaction, that sort of thing, it will be better. My answer to this, which has, you know, it's just my opinion, my answer to this is that we are not talking about taking all course work online: possibly seven in school and the one you can't get or maybe six in school and the two you can't get, depending on your circumstances, in an online setting. It's not either/or. That's not what we're talking about here. But you're right, there are all sorts of people predicting that once you start to move that direction, it becomes either/or. And I don't think the answers to whether or not that is, in fact, the way things will turn, out are out there just yet. But that is definitely, the lack of social interaction is the most often stated concern in studies like these. You certainly touched on something that is important.

Participant #1: Participant #1 would just like to say that, um, some people prefer not interacting with others. Like, some people are shy or they just like the computer and you can get around with minimal communication in life. It may not be pleasant, but it's a possibility. And if that, um, helps you, then that might be a good way to go for you.

Participant #3: Ah, Participant #3 would like to say to Participant #1: Is that, Is that a healthy way to go through life, not to talk to anyone, just say, you know, the only reason, the only reason you talk to someone is they ask you if you want paper or plastic at the grocery store? Is that healthy conversation? You sort of need some human touch and human... Like, sure talking to someone on the Internet may be fun, but you don't know who is on the other end. You've never met them. You've never been close. You never really shared your ... Like, you can share your inner thoughts on, ... in writing and stuff, it's the whole interaction when you can talk to them and you're seeing them and body language and that kind of stuff that's not displayed over the Internet.

Participant #1: Um, I agree with you completely. Like, most people in our society need other people to thrive, including me. I love talking to people, but, um, there are the few people who just can't stand being with other people, like the real loners types.

Participant #3: Participant # 3 would like to add - those type of people are sort of like the unibomber. [General laughter] I don't think that many people live in, like, a twelve by twelve shack - male people present.

Participant #1: But some people, some people do prefer just to be alone. Like, they would still be coming to school for the majority of their classes, but just to not spend the extra time with other people is what they want, so that might be better for them.

Participant #2: Um, if it is supplemental, if it's one AP course, two AP courses - four or five- but you still have to come to school for your regular courses. We're not talking about home schooling. It's just a supplemental idea, then you still have your social interaction.

Participant #4: OK, Participant #4 would like to go all the way back to the security issue. Now, we were talking before about giving out passwords to other people, so they would use the information to take the course.

Participant #2: This is like the downside, right?

Myself: OK. OK.

Participant #4: Yeah, you were saying about other countries and stuff. OK, well aside from that, what about people, if they know what they're doing with computers, but they don't know the course and they find some way to cheat at this?

Participant #2: Right.

Participant #4: Because, like I have yet to find a security system that didn't have a way behind it, like a back door.

Participant #2: Very true. Very true.

Participant #4: If you didn't... If you can make it, you can break it.

Myself: Yeah, but you can't write your AP exam online, can you?

Participant #2: No.

Participant #4: Oh, OK.

Myself: You can't ... There is no electronic exam.

Participant #4: You would still be handing in your course work and stuff like that though.

Myself: Yeah. The course work , ah, the course work, you can get - depending on which course, you can get anywhere from two to four extra credits for course work completed online, right? But the actual, sort of major goal, is that exam at the end, right?

Participant #4: OK.

Myself: And if you... That exam is hand written with a pen and a piece of paper.

Participant #4: So, at home, OK?

Myself: No, no, no it has to be invigilated. You have to write an AP exam, like if they say, that [an] AP [exam] will be written on May 6th at a.m., it has to be written on May 6th, at a.m. Everybody in the world who is writing has somebody supervising them doing that.

Participant #2: Um. What was I going to ask? Oh. Does the course mark depend solely on the exam? Or is it part course work, part final exam?

Myself: Your AP grade, as such, is 100 per cent the exam.

Participant #2: OK, then that works out. So that people can't get, like, a person smarter than them to write their course load and then do the exam, bomb that, and still get like a 2 or a 3?

Myself: No.

Participant #4: Huh, shoot.

Myself: But you... What happens is that you get some locally developed course credit for the work that you do in school toward an AP exam, right? And then... So you get some credit, whatever... Like in some cases,

I can't think of ... I think, Music Theory, there is no Grade 12 equivalent, so you would get 4 full credits, so that your music teacher would give you. Whereas, in English, if you took English Lit. AP, you can get as many as 2 extra credits because they figure that half the course is pretty much like Lit. 12 anyway.

Participant #4: Right.

Myself: And the other half is different from it. So you would get your Lit. 12 credits and plus, you might pick up 2 locally developed credits for your special work on those units that are different from the core. However, um, when it comes down to the end, what the... for sort of the big pile of marbles, it is all in that exam and that's hand written and it is invigilated.

Participant #2: That's what universities look at. They look at your AP exam mark?

Myself: Yeah, they don't look at your local mark.

Participant #2: OK.

Participant #1: It's not that important. It's just kind of bonus marks for you?

Myself: Bonus credits, more than anything else.

Participant #2: Bonus credits?

Myself: Yeah, and depending on which course you take, some courses, there are no bonus credits because they are so close that they, they feel that it is just the same at an enriched level. OK?

Participant #4: Um, about these courses, specifically...

Myself: Um, hum.

Participant #4: Like, I can see how writing the Computer Science or Calculus or stuff like that - it's an easily markable course. But what about something like Art Drawing or Art General? As far as I know there is not Art exam at this school.

Myself: The Art exam for AP is not an exam for AP either. The Art exam is a portfolio. They send you a list of 16 things that you have to do - I think. The last time I saw somebody in, I think it was in an Art Studio class do it. And what she had to do was she had to do one sculpture, she had to do one artwork with fabric involved, she had to do one charcoal thing, to certain specs...

Participant #4: Right.

Myself: And this portfolio she prepared, and then she had to take slides of it, and actually she submitted the slides. Plus she had to have written descriptions of the intent of each piece and she submitted that.

Participant #4: Well, because here, when you take Art, I would think that at least half of it comes from just seeing what other people do. You get ideas from them.

Myself: They... They do have online portfolios. You can go look at all these old portfolios because they all submit it in slides, right?

Participant #4: I guess.

Myself: It's not perfect.

Participant #4: It's like going into a museum online or something.

Myself: Yes.

Participant #4: You just don't get the same ...

Myself: Yes, you're right. Exactly right. It's not the same. Yeah.

Participant #3: Participant #3 would like to add that just in general that, isn't it bad for your eyes to look at the Internet constantly, all day? ...

Myself: Well I had to get my glasses upgraded this year, yeah.

Participant #3: I rest my case.

General laughter.

Myself: OK, how about we take a look at question #4? Let's take a look at the specific technological features that you ... that have been identified as needed, helpful, or ideal. So if you just flip back a page, and just take a look at those features. The first thing I want to do is to let you know that I am not completely archaic. When I designed this in October, people were working on web board software. By the time that I had all of the questionnaires approved and gone through all of the official university processes, Web Board was out. Now that Web Board is out, I know that, ah, email, bulletin board access and chat line access are all one software.

Participant #2 & 4: Yeah. Yeah.

Myself: Now that Web Board is out ... So industry standard will probably have it that by the time that this course, these courses would be developed, that there would be Web Board support, in which case, you have email, bulletin board and chat line all in one.

Participant #4: The technology is not a problem, I don't think.

Myself: No, but you see the thing is the technology is a huge problem in getting something prepared that actually can be run in schools because, unlike your school, I am off to three where I have to instead... I can't use, I can't use my web site as my presentation. I have to do it with overheads.

Participant #4: Why is that?

Participant #1: Wow.

Myself: One school in the ... One computer in the whole school connected to the web.

Participant #1: Really?

Participant #4: They don't have any.

Myself: Yeah.

Participant #4: One.

Myself: One.

Participant #1: Every computer in our school is connected.

Myself: I know. And some of them are Macintoshes that are ...

General laughter.

Myself: That are more than 12 years old.

Participant #2: I am not aware of that term. I don't know what to say.

General laughter.

Participant #2: Participant #2, that, that brings up a nice point of how the Ministry ... Would they buy computers for these schools or would the participants have to buy their own computers or Internet access in order to do these courses? Which could add to the total cost, or?

Participant #3: That's like two grand, right there for a nice computer.

Participant #2: Yeah, for a computer and Internet access. If the family can't afford that, then I guess they would have to rely on school. And it there is only one computer in the school, then how valuable is this?

Participant #1 : Rude.

Myself: I think you have a point. At this point, the schools that I mentioned, each of them are slated as high technology needs schools, and each of them should have one running lab that is connected, possibly with 20 to 24 terminals in it by the time this would be ready to go. But you're right, there is no guarantee of that. That is in the plan, but then we've watched plans change before. And technology access is a huge concern for a lot of students because, um, they don't, um, they don't believe that they can get enough access at school and they know they can't at home.

Participant #2: Something else just entered my head, um, our computer lab closes at 4 o'clock or something like that.

Participant #1: Yeah.

Participant #2: And so if you're expected to do 4 hours homework, and but you can't... You don't have a computer at home, and I guess if you write it all up and you would have to type it all out again anyway, so it would just be difficult, if you only ... If you are taking 3 courses you're in an AP course, you're expected to do a lot of work in an AP course, and you don't have the time to be in the computer lab because you only have one hour a day, or one hour and a half maybe , then how would you work around that? Or how heavy is the course load for AP?

Myself: It depends on which course you're taking, how much time you would have to spend online.

You said something. Participant #1: If we are using the computer lab at school, that also means that you have to have a teacher supervisor there because we're not allowed in any rooms without teachers or supervisors.

Participant #3: Yeah, they don't want you stealing the mouse balls or something.

Myself: A common problem.

Participant #1: And we thought our school was lacking...

Participant #3: Is that common, like, in other schools?

Myself: Oh, the disappearing mouse balls?

Participant #3: What's the attraction?

Participant #1: Somebody did that all last year.

Myself: I have no idea. It goes in... It's like a wave. It starts, you know, probably in Victoria, you know, and then it goes through the province and then for a year you can leave computer labs unlocked and nothing happens, and then the wave all of a sudden comes back ...

Participant #3: Mouse balls!

Myself: And then they're all gone again.

Participant #1: They don't even bounce or anything.

Participant #3: I was washing my car and I stepped on one.

Participant #4: But is it, is it, common that schools don't have Internet access?

Myself: Yes.

Participant #1: Really?

Myself: Out of the twelve schools that I will be visiting, this is the only place I will be guaranteed full lab access, so far.

Participant #3: Do they still have, like abacus?

General laughter.

Participant #1: Slide rules!

General laughter.

Myself: You guys are very lucky you shouldn't laugh at other people. But, no, technology access is a major concern for some students. OK, now, you, someone said that telephone access to technical support, um, this was one of the people in the larger group, would be unnecessary. Have you got a ...

Participant #2: I would like telephone access. If you are working on something and burning the midnight oil... Oh Participant #2, If I am burning the midnight oil to get this project done by, say, Monday, um, and I come across a problem, say in programming and I cannot figure out how to solve it, and if I go into the Web Board, maybe I am lucky enough to get it in 5 minutes, but if I am not, well I'll be up the creek without a paddle. Where if I was in school, perhaps, I could just ask the teacher, so there has to be some sort of direct, instantaneous communication with somebody, so you can ask them a quick question.

Myself: OK, now that would be ... I believe you are talking about academic support, not technical support.

Participant #2: Yeah. Oh, you mean technical support, like if you're program is ...

Myself: Well, number one, if there is something specifically wrong with the program, or if there is something wrong with your connection online, or if there is something wrong with, ah, the way an image or a diagram or a chart is loading from within your program. If there is something wrong with, ah, specific thing. Do you

need telephone access to somebody that understands how all of these programs are made? For example, they could hire, say, three technicians.

Participant #3: Well, Participant #3 would like to say that you could probably just get, like ah, *AP Internet*, ah, *for Dummies* book or something like that. I am sure you could figure it out with just instructions or something.

Myself: Yeah: If you have common problems... those could be posted up on a technical bulletin board.

Participant #2: FAQ or something.

Participant #3: Yeah, a lot of people would be stuplified by a simple error - that most people would find simple- if they had never used a computer on the Internet before. They could be easily stuplified by something, not realizing that if you put WWW in front of it or something. I don't know. Stupid things like that.

Myself: Of course, and that's, that is a reality. This ... people who are very, very bright in content areas, having very vast differences in technological competency; that's very common. Very common, so that's something that would have to be considered.

Participant #1: I would just like to say that, um, yeah if you don't have a computer at home. You just buy one to get used to it and to get used to the Internet and say Windows, let's say, because sometimes Windows has problems, um, it takes time as well. So that's just more you have to do.

Myself: Yeah.

Participant #2: I guess, in this day and age, if you're not running around with a computer, know-how anyways, you're not a very formidable, ah, ...

Participant #1: Yes, some people don't have the money though. It's just ... If you are taking the, ah, stuff online and you just got a computer, whatever, then it does take time.

Participant #2: Participant #3 is now eating.

Myself: He is off-line for a while. OK, um, telephone access to the instructor, how many people just sort of go... Ah, Participant #2, do you think that that is essential?

Participant #2: I would say it is very essential.

Myself: OK. Participant #3?

Participant #3: Yes, Participant #3 said it is essential too.

Participant #4: Participant #4 somewhat agrees. For some people, yes it would be essential, but for others it would just be like an added bonus.

Myself: OK.

Participant #1: For dummies, like Participant #1, telephone access would just be, like, very necessary.

Myself: OK, um, if you had to choose, between telephone access for technical support and online access to technical support, and by making the choice, and having one rather than the other, which would be the most important?

Participant #2: Um, Participant #2 would say telephone access would be most important because it would be easiest, but online would be a heck of a lot cheaper from a standpoint that way because you've always got to think about money. So, but the problem is if, say, you can't get you Internet to work, how are you going to get on to ask a question?

Myself: Yeah.

Participant #3: Ah, Participant #3 agrees with Participant #2.

Participant #4: Participant #4 would like to say that if you're giving telephone access, it should be in that general area where you're located. That way it would keep the cost down. Otherwise, if it's like an academic thing, then you could do that online. But if it's just something with your computer, your connection, then you need something local.

Myself: Oh, that's an interesting idea.

Participant #4: Because once you're online, there is like IRC and ICQ and all these other programs. Yeah, and there is always somebody online.

Myself: Good point. Good point.

Participant #1: Participant #1 says, um, yeah, if you can, um, if you can, telephone would probably be recommendable, because if you can't get on to the Internet, you can't get help, getting on.

Participant #2: Participant #2 would like to say that it shouldn't be the lifeblood. There should be, like a fallback system, that if you can't do anything else, then you can phone somebody, but otherwise if I can't figure out how to work this new program I got, or how to open this file that I don't know how to support, then you could just go through an FAQ or something or search engine to find your answer.

Participant #3: Participant #3 would like to say that Participant #2 has very good ideas.

Participant #4: Participant #4 would like to know where Participant #2 can come up with all of these metaphors so quickly.

General laughter.

Myself: Is he an AP Lit. student perchance?

Participant #1: Oh, no.

General laughter.

Participant #2: One thing I don't do well is speak English. I can speak fine. I can't write.

Myself: OK, the reason that number 8 and 9 are in there is because there is a lot of recent research that says if you're going to get a learning community, at least even a rudimentary learning community, formed, um, and those people learn together, but they never see each other... They're in electronic space, that it is absolutely essential to have off-task talk. In the classroom, if you're talking about what you did on the weekend, this is not good, but in an electronic classroom, if you're talking about what you did on the weekend, it forms the kind of bond that helps people actually work better in small groups.

Participant #1: That's true.

Myself: Provide more accurate, a lot of .. Learning communities are based on student-to-student comment and criticism, as in the constructive type. And therefore, they feel that it ... The research is starting to show that if you're going to have an effective online learning site, that off-task talk is a must. What do you think about that?

Participant #3: Participant #3 would like to say that, um, that even though this is an attempt to, uh, make the, uh, virtual learning more accessible and more, uh, personal, it's a feeble attempt and it will not work.

Participant #1: Were you home schooled?

Participant #3: No.

General laughter.

Participant #1: Participant #1 would like to say that, um, talking is not necessarily enough. It's actual visual, to see someone, like even if you put up a picture that would be better, like to see what everyone else looks like and ... it's small , but it would help.

Participant #3: Then you would get people putting up things like Pamela Anderson pictures and um...

Participant #1: You would have to be more mature if you're taking an AP course.

Participant #3: Yeah, that's true, you could.

Participant #4: I wouldn't.

Participant #1: You're not taking an AP course.

Participant #4: I'm sorry.

Participant #2: Participant #2 would just like to, ah, say the fact, um, if the whole province is online, doing AP online, then you will have a considerable amount of people at one place in time.

Participant #3: I don't think they can hear you.

Participant #2: If you have the whole province doing AP's online, then you will have a considerable amount of people doing that certain course at that certain moment, like during the day from 9 to 3 or whatever, so you would have a lot of traffic. And say if you had a chat room that was fairly generalized, all computer courses, you'd probably, the messages would span by so fast, you could never answer them because, say there was a hundred people in there, right, that all have a question to ask...

Myself: You wouldn't. We're not looking at a learning community quite that large. We'd be looking at the learning community of a cohort, which would involve a maximum, probably of 30. Maybe, 35, I am not sure, but it is in that range.

Participant #3: Participant #3 would also like to add, if your typing skills aren't fluent, it is almost impossible to enter a chat room. It's really hard to keep up. And that takes, like, I took Keyboarding 9 and it was the best course I've ever taken because it makes everything, all you projects easier to do, and you can't get that over the Internet.

Participant #2: Participant #2 would just like to say the number 2 is completely correct.

Participant #1: 3.

Participant #3: There you go, backing yourself up again.

General laughter.

Participant #2: that if say, a question goes by that you can't answer, you try to type like a madman, trying to answer the question, but if you can't type fast enough... It has already gone past before you can answer it or ...

Myself: So then, would you need a private forum? If you think it is going by too fast, take not of who sent it. [END OF SIDE ONE] I'll tell you when we get there [the recordable part of the tape.] OK, we were talking about chat rooms.

Participant #1: Oh, um, Participant #1, I would just like to say maybe, that if you don't have 30 people, that if you have five people that you really get to know that that would be better or easier, and you might want to talk to them more. [It's not picking me up.] Um, just saying that, um, to have a smaller chat room, you'd get to know the people and, um, if you did type slower, then, they would know you and they would maybe wait for you.

Participant #2: I just think that would take magic, would have to be there. So instead, just have one general chat room and just don't make it restrictive. ... It should not be too generalized and it should be expandable enough, say, if you wanted to take five of your buddies, say that you were working on a project together even, that you were working on for an AP course, that you could, say, open up a window or something... Just make it so the opportunity was there to selectively group people.

Myself: Web board does have that option.

Participant #2: OK.

Myself: So, so and it is definitely one of the things that you would find if you were working in an online environment... Is that, the new designs all include three kinds of assignments: individual work is something independent that you do; the second kind, the second thing, is a three-four-five person group project, and then the third thing is a full-group project, where the whole group is trying to accomplish something. Oh, I know, and you work, of course, from one toward the other. And what you do, of course, your portion of what you do, is happening, is very small in that last project. But the amount of communication that has to go on...

[BELL RINGS]

Myself: Closing comments... anything that you didn't feel you got a chance to say...

Participant #1: Participant #1, I just wanted to say that about the chat rooms, that if you have five people in a chat, three of you are trying to

[ANNOUNCEMENT]

Participant #1: OK, I would just like to say that if you have five people in a group and two people procrastinate to the bitter end, and you would have to work with them at night and the other people are morning people, that won't work. You have to group people with other people awake to work with other people ...

Participant #2: Yeah, but if the option is there, then it is not a problem. It just has to be done.

Participant #4: Was the chat room intended to discuss the problems? Or was this for that free time thing you were talking about?

Myself: Free time. You would have an academic, uh, conference, is what they call them to discuss academic issues.

Participant #4: So, then really, it wouldn't matter how fast you are if it's just for fun. Like because all the real problems would be posted.

Myself: Oh, you were thinking of it as an academic discussion.

Participant #4: Yeah.

Myself: No. No. The academic discussions ... I think this may be yours... The academic discussions are held on conferences and they don't go off. They just accumulate, so you get to watch the whole thing as ... and can go back and refer to it later if you like.

Participant #3: Number 3 has no concerns anymore.

Participant #4: Yep.

Participant #1: Same here.

Participant #2: Number 2 is all done too.

Myself: OK, listen, thank-you. I really appreciate your taking the time. It's been great to meet you.

Participant #2: I want to see my name in the paper document. That's it.

Participant #3: Will we get to see this?

Myself: A copy will be sent to the school.

Participant #3: I didn't check the little box.

Myself: Oh, yes, a copy will be in the principal's office, in ...

[END OF TAPE].

F-2.b: OS-S1 Focus Group Transcripts

OPENING NOTE: April 16th, 1999. The following focus group included two males and two females. All were either Grade 11 or Grade 12 students. None had enrolled in or experienced AP course work. No AP courses were currently offered in their school.

[Sound check]

Myself: OK, Question #1: Do you feel that taking AP courses would benefit you? Why or why not?

Participant #2: Participant #2 thinks that would be very helpful, although she doesn't really know a lot about them yet because just this week was the first time she heard about them. Um... Do I talk I the third person?

Myself: No, you can talk just like yourself. "Participant #3" and then just talk like as if you were you.

Participant #2: Participant #2, well, I feel that, I feel that some of these courses have a lot of information in them that you wouldn't be able to access otherwise, and I am not sure what kind of a setting you would take them in... Just in high school?

Myself: Um, hum.

Participant #2: Well, then, yeah, I would be really interested in taking them because they have some very valid stuff that isn't offered here.

Myself: Thank-you.

Participant #1: Um, Participant #1, I think that, ah, in terms of getting, if you can get graduate, I'm sorry, course requirements toward university, it would be a good thing, and if it helps towards, um, towards scholarships and those types of things, it would be good.

Participant #4: Participant #4, And I think that it would be very beneficial, um, because sometimes, well, you an work at your own pace and, ah, there is a lot of information you can access and it's just a lot easier...

Myself: Thank-you.

Participant #3: Participant #3, I think, um, it would be very beneficial because you could go at your own pace and you can do it at home, if you need to. So you are working on your own time; you don't have to worry about the school course system.

Myself: Yeah, it is flexible that way.

Participant #3: Um, hum.

Myself: OK, Question #2: Do you have any concerns about the idea of taking one or more courses? Is there anything about this whole concept that makes you go, "Oh, but ..."?

Participant #1: I am a little concerned about ... Oh, Participant #1, I am a little concerned about, um, how it would work over the Internet. Like, how, how would you do tests and how would you get your assignments across and all that type of stuff.

Myself: Tests, you would do the test, adjudicated by somebody in your school at the end. There is only one test.

Participant #1: There is only one test.

Myself: There is only one test and 100 per cent of your mark is on the test.

Participant #1: Oh.

Myself: Yes, it's exactly like law school. Princeton is famous for that.

Participant #4: Is it kind of like home school too, in a way?

Myself: Well...

Participant #4: Some of them have home school on the Internet.

Myself: Yes, it can be like that. You can do it. You can block out a block out of your time schedule , and come and do it in the library or where ever you have Internet access, or you can work from home, if you have the equipment. It depends. And I think there will be a marriage of the both. You know, like, if your equipment at home will get you online. Or you might do all of your assignments or your typing or your work at home, and then come in and enter it if you don't have Internet access at home, or whatever, some sort of working together.

Participant #1: So the assignments are worth some part of your mark, right?

Myself: The assignments, it depends... Over on the table where I've got the bag sitting, is the Ministry policy. If you're taking Advanced Placement Language, for example, it's considered a writing course and it's worth 4 credits. You get a local mark on your provincial transcripts. You'd get that local mark on there, right? And you would get 4 credits toward graduation. However, you will then get another transcript from Princeton, New Jersey with your AP grade on it. As far as the universities are concerned, that's the only transcript they're interested in. However, your high school transcripts that say you have AP credit, um, you're given the AP... you kind of get two for the price of one... Do you see what I mean?

Participant #4: Um, hum.

Myself: Now, if you take the English Lit. course, or if you take the Biology course, there's so much in common between the two courses, the AP and the regular high school Biology, you're going to get two credits extra for doing that because the government says, "Well, half of that course is really beefed-up Bio.12," so you can get 4 credits for Bio 12, but you can only get 2 extra for the AP. So there's ...

Participant #1: Do you also then get...

Myself: It's all on the Ministry...

Participant #1: Do you get the... If you only get two credits for Bio. 12 though, then do you get a bit of a credit for university still though?

Myself: Yeah, those are separate. The university looks at the transcript from Princeton, not your high school one. It looks at your high school transcript when it's going to make a scholarship decision, right, but it looks at... as well as the Princeton, New Jersey one. The high school one tells them, OK, this is an AP student when you apply, right. But then they look at your marks from Princeton.

Participant #4: Do you also have to take ... Do you have to take the school course plus the AP?

Myself: No. Some schools mix the two, which is what I was doing. If I would teach Lit.12, I would do it so that you wrote both exams. You take the both courses at the same time, and mix and match, just add the AP stuff on. And the Open School is thinking about that's how they're going to develop all of these courses: is start with the high school stuff, if there is, right, because if they put on some of the Calculus stuff, there isn't

anything like that in high school, right, OK. So they would be mixed and matched so that you, you do both. You get the high school credit and then you add on the AP.
Participant #3: So, but let's say I want to do something... Let's say, for example, like Music Theory, where nothing like that is in high school, then would that, would that be totally separate?

Myself: Yes.

Participant #4: That wouldn't show up on your transcripts?

Myself: It would. It would as a locally developed course. You know, under the different category.

Participant #3: OK.

Participant #2: Participant #2, ah, it's [the recorder] not picking me up at all. Participant #2 feels that just because she doesn't, ah, I don't have a computer at home, and I think that it might be very difficult to complete this program if I didn't have the access at home because as much as you can do studying at school, a lot of it does have to be done in your own home environment. And so, just for one of the questions, it asked if you felt that you would need both and I put that you would because I don't think it could be done otherwise.

Myself: OK, that's a really legitimate point.

Participant #2: And also just the thing about not being able to contact the teacher. If you can actually have that kind of direct access to the teacher and to asking questions and that sort of thing. I think that would be really important. You'd need to have that for it to go through because otherwise, if there is things you don't understand, then who are you going to ask?

Myself: What would be done is there is that there would be an electronic bulletin board system where, if you had a question... As soon as you have the question, you post it on the bulletin board and then there would be a time limit. Whoever was the teacher for the course would have to get back to you within so many hours, or by 3 o'clock the following day, or something like that. And in the meantime, other students who, who, you know, picked it up and saw it there, if they knew the answer, could give you advice, they might answer you ahead of time, right? But then the teacher would be given so many hours to get online and answer. So everything, those and ... and there would possibly be telephone back-up to go with that with specific office hours, just like you have specific class hours.

Participant #2: Oh and another thing I was thinking, Participant #2, about this course is that it's quite expensive for just ah, ah, a university, I mean a high school credit because we don't have to pay for any of our high school courses, but if we were to do this, then it's rather expensive and I don't think it would ... not as many people would be able to afford it or to pay for it.

Myself: Yeah, that's a very common concern. It's also an equity issue because if you happen to be lucky enough to live in Saanich and you happen to be lucky enough to be at the last school where I conducted this study, you have the option of taking 6 Advanced Placement credits for nothing because they teach them in the classroom in school. So I think there is a strong equity case here for, maybe, there should be some funding behind that. This is, this tells, you what it is going to cost. It doesn't tell you that you have to pay the whole thing. That has not been decided at this point.

Participant #2: Because that's almost a thousand. No, it's probably more than a thousand Canadian.

Myself: This is the Canadian price. This is the Canadian price in here. The American price I was talking about was on the net. OK, any other concerns about taking AP courses?

Participant #4: I have one question, Participant #4. I am not that great at computer knowledge and stuff, like, I don't really know how to use it that much without .. Would there be some kind of availability for instruction?
Myself: Yes, there would definitely have to be a technical support system because you take any group of people who are strong in any academic field and their computer skills are going to range from here to there.

Participant #4: Yeah.

Myself: And it ... They're, they're the same in their academic ability in that particular content area and they're vastly different in their, in their computer literacy levels. That is the norm, so there would have to be technological support built in.

Participant #1: Another thing I was wondering, Participant #1, um, is... There are some courses, like you can take Calculus here, and so there is Calculus for the Advanced Placement, but there was also a bunch of courses that really had no back-up in the school. I know some schools offer different types of courses, so where would they base their, sort of what everybody has to know to start the course from?

Myself: To get... What will happen is, according to how you rank those courses, OK, the two hundred participants in the study, which ever courses are ranked the highest by that group would be the first developed. And then it would go down the list. Hopefully, one day having all of the courses online, but the ones that are most popular amongst the participants would be the ones developed first, if it goes to development stage.

(I didn't answer his question!)

Participant #1: OK.

Participant #3: Participant #3, I am wondering the Spanish course. How are you going to offer the audio part of it because you can do the writing no problem over the Internet, but about the audio?

Myself: Multi-media.

Participant #3: It would be multi-media?

Myself: Yeah, the Open School includes multi-media products in all of their courses.

Participant #3: OK.

Myself: So there would be audio files and so forth.

Participant #3: And that would be over the Internet, or ?

Myself: Yes, that's not hard to do.

Participant #3: Yeah, I didn't think so.

Myself: So it's, not, it's not hard to do. You could actually have oral exams with your teacher - or oral quizzes for your locally developed credit.

Participant #3: Yeah.

Myself: OK, do you have any ,um, questions and concerns beyond what we have talked about specifically about the idea of taking courses on the net? Any other concerns about doing it via the net?

Participant #2: Well, Participant #2 has never done this before and I've, I've heard of it happening and stuff, but I am not ... I still have a lot of doubts because it's just, it's so different from anything anyone has really ever done before. You know, it's always been in the classroom and although you can get information off the Internet and that kind of thing, it's just a really different set-up for a class. And I mean I am just used to having my books, and you know, having the teacher and being able to go up and ask just them face to face and explain it that way, but just since this is all... Even when you do get to the bulletin board and you ask the question and stuff, you know, sometimes you just sort of need to talk to them, to talk to the teacher to have that kind of reassurance and stuff. And I don't know, I can't, I think it would be awkward to sit in front of the computer hours a day or something like that. It would just be ... you need to do something more. Like, in regular classes, you need to get up sometimes, and you need to ... There has to be more that just sitting behind a computer.

Myself: It is difficult. I took a third of my masters degree online through Boise State in Idaho. And it was very different. There is no one... You kind of get to know who people are. You get to know who you like and who don't like in your groups and so forth. Ah, one of the things that the research is showing to help that, ah, improve, is there has to be in a good instructional design, for the net, a place to talk about not-class stuff. There has to be this off-task place, like an extra chat room or discussion group where you can go and just talk to each other about your real lives. And that helps people work in groups, apparently, a lot because they get a sense of each other and they're not so afraid that person will, this unknown person will think that I'm dumb if I say this, right. Once you get a sense that oh, they also like skiing and I like skiing, so we're probably not that different, and I dare say, you know and then, you know ... And as well that is the biggest challenge for teachers online, is that motivation, that encouragement role. You can't say, "It's going to be OK," online, right, and make it mean exactly the same thing.

Participant #2: And also, Participant #2, if there is group work and that sort of thing, I just, I think it would take a lot longer because well when... I know in chat rooms and that kind of thing, you can get there and you can write stuff up, and but still it's hard to get everyone's idea heard and stuff like that. But when you're sitting in a group it's easier to tell how people are feeling about, you know, if there's some sort of argument or if you can't quite decide, you can tell how people feel because you can see it on their face. You can see the expression, but with this, it is only what they say, then it is harder to make sure that everyone feels included and you never really know because if someone is too afraid to say, "You know, this isn't what I want to do," then ...

Myself: You have no other clues.

Participant #2: Yeah.

Myself: Yeah. That's come up again and again.

Participant #3: All this interactivity, you know...

Myself: That was Participant #3 over there, saying that...

Participant #3: Sorry, Participant #3, will there be teleconferencing perhaps?

Myself: Um, I don't see that, but I do see in, ah, the very near, the very near future, a little camera sitting on the computer.

Participant #3: Yeah, that's what I was thinking.

Myself: So that there is visual exchange of images.

Participant #4: Yeah, because that would help a lot.

Myself: It's not that expensive now. It's also not all that hot, but it's very inexpensive now to have, say for each person in the class to put on the bulletin board a picture of themselves or two. You could have a couple of pictures of yourself, so that people could click on your picture and say, "Oh, right, that's who I am taking to," or not. That's not very expensive, but the video conferencing is more expensive because it takes up a wider bandwidth ... and slows everything down.

Participant #3: Yeah, but I'm just hoping for the,um, little camera on top, Participant #3, just a little camera so that you can see each other.

Myself: Yeah.

Participant #3: It's a little slower, but it gets the job done.

Myself: Yeah, That's a good suggestion. That's a really good suggestion. OK. Which, we almost started on this already, which, technological features that you've taken a look at as needed, helpful, and ideal, for an Internet learning environment, do you have specific reasons for? Do you want to make any comment about any of those things? They're, uh, let's go back... How important is it to have telephone access to the instructor?

Participant #2: I think, Participant #2, I feel that's really important because if you can't see them face to face, at least you can, you know, have that kind of ongoing conversation. Yeah.

Participant #4: Participant #4, I think that's really important too... just the verbal interaction and then... ah, just to make sure that they understand, and maybe if you have a question or something.

Myself: OK. Participant #1, how, how important do you think that is?

Participant #1: I think that is very important, especially if you have a question or something like that that you can get some, sort of, almost immediate, so it is kind of hard to discuss with somebody on the Internet. Yeah, we can sort of have some sort of question-answer, question-answer, but you can't have an actual discussion on different concepts and stuff. So if you really need help on something and you're really not understanding, I don't think that the Internet is the best place to get help. Ah, if you were able to phone up at a certain time and say, you know, "How do I do this?" Um, then, then it can be explained a lot easier.

Myself: OK.

Participant #3: Participant #3, I'm wondering, ah, maybe they can do both. You can, you can talk to the professor over the phone while he is showing you over the Internet how to do the question or something like that. That way you get both the audio and the visual help.

Myself: Excellent.

Participant #3: That would help.

Myself: Especially in the sciences, if you are looking at a model or something. That's an excellent idea. How about telephone access for technical support? That's, "OK, I can't get my computer to run this..."

Participant #1: The key, the key thing there is, is to have the, especially, oh sorry Participant #1, um, the key thing is to have Internet support for one thing. I don't think that the telephone is that important, but if they were able to for people who aren't really sure, it might, it might help them, and if they really don't know what they're doing with the computers.

Participant #3: Participant #3, just to start it, you would probably need the telephone help because you might not be able to run the program to start the, to go over the Internet, or maybe you can also have an email system where you can phone the or email the technical person to help you with...

Myself: Good.
Participant #2: Oh, I just think that for, oh, Participant #2, for those people who don't understand computers very well, it would be nice to have that as opposed to maybe the next one: the online access to technical support, just because if you don't know what you are doing on the computer, then you would want to be able to use, to talk to someone over the phone...

Participant #4: Participant #4, I think it is really important also.

Myself: OK. And you have already commented, to a certain degree, about the online or email access to the technical support. What about email access to your instructor? Would you want to be able to use individual email to talk to your instructor?

Participant #1: Participant #1, I think, that that's really important. You, I mean, any, any way that you can have access to your instructor is going to be the best. You know, if you can find, you know, everything would be the greatest, you know, to be able get in touch with him, but if you can get email, um and sort of through the bulletin board, and the other things, um, I mean, it can only help with learning.

Participant #4: Participant #4, I feel the exact same way Participant #1 does.

Participant #3: Participant #3, same thing.

Participant #2: Participant #2, I still, I just have a lot of doubts about this online instruction and teaching because it's just so impersonal, with our technology right now. Like Participant #3 says, maybe you know , in time and stuff and with the videos... and that type of thing, and you can have it and you can see everybody and the you can have conversation and then, it can carry on like that, but just, I think the way it is right now, it's just so foreign and so, so cold a way to learn, just, just having everything through the computer, seeing it on a screen, it's so impersonal. I think it would be really hard for a lot of people to adapt to it. And especially for, for certain courses, where the people are... I mean, I don't want to generalize, but just for some of the courses, like with the Spanish, you know, it's very important that when you're learning a language that you have, that you can have the sort of oral, talking and listening.

Participant #1: I don't think, oh sorry, Participant #1, also when you're learning something like a language, to be able to say to a teacher, you know, "What does this mean?" or "How do you say this?" um, and have them say, "Oh, you know this is...what it is or whatever," right away. Um, If you had to put, you know, "What does this word mean?" on a bulletin board and they told you five hours later, it's not particularly useful.

Participant #2: And I think that what this is trying to do is that it is trying to find as many different ways to make it as close to the kind of communication, oh Participant #2, the kind of communication that you can have with the teacher one-on-one. And through the online, it seems that all the different things that they're trying to do, they're trying to recreate it, but I just don't know if it would work.

Myself: That's a very common concern. You're touching on a thing that has come up in the pilot for this study and it came up at the last site. You're site #2 in the full study. Um and that's the whole thing about social interaction. What happens to a sense that I belong? The answer that people are positing to that particular question is, um, the creation of what are called virtual learning communities. And there is a whole bunch of theory about what it is that you can allow people to do and what it is in successful programs that are running right now that people are doing on their own, without any research to tell them that make some groups seem really tight really quickly, and people really buy in. And so there is, there is a lot of research on, going on about either describing or discovering, you know, how to make it better. I believe, personally,

this is the second-best option to having your own classroom and your own teacher. If there is no option, if the real world has it, it can't be done; it's not going to happen, then this is better than having no other choice.

Participant #2? Yeah.

Participant #4: Um hum.

Participant #1? Definitely.

Myself: That's where I see it fitting into the scheme of things, myself.

Participant #2: Um, I know a lot about, well not a lot, but I know more about taking courses by correspondence. And that's something that you have to do, you know, all by yourself and there isn't a teacher or anything like that, and this would be a lot better than option for the courses that you can't take in high school. I think that this would be a good way of doing it. Just, but what I think would be really important is for the students to have, to be very dedicated. And it has to be something that they want to do for the information itself, and not for the atmosphere, being in a class and not for the, you know, the acceptance of the other students or the comfort from the teacher, but they'd have to have the drive to want to get this information and this is how they' d do it because I can see that this would be very, very useful, because it's the perfect way to get the information . You can't have someone come in from all these different places come in to just one student to get the course, and so this would probably be the best way.

Myself: Thank-you. [To Participant #1]Any comment, you look like you're in a hurry.

Participant #1 : Um, yeah, I think, I think that we've kind of touch on the fact that, I think in school...

Myself: Participant #1

Participant #1: Participant #, ah, in school, you have, you don't only go just to learn, you go because you have your friends there and because, you know it's something, something to do. Um, whereas, this would be solely to learn and for a purpose, so I think it would make it quite a bit more challenging, but as you say, if it is not offered anywhere else and you want to get these courses, and you're willing to be driven enough to, um, to really go for them, then I think it is, yeah, the next best thing to the real world.

Participant #4: Participant #4, I also agree. I think it's way better. I've done correspondence, and I think it would be better then that, but I also am a very interactive person and I need lots of, you know, communication and stuff, and interaction, so I am not sure how, for me personally, it would work. For some subjects, I guess, it would work better, depending on how driven I am and how much, just work, there is and sort of... Like I couldn't see myself with something like English or Art over the Internet, but some things, I guess would work pretty well.

Myself: Thank-you.

Participant #3: Participant #3, um, this would definitely help schools, like small schools that don't have the courses, don't have the numbers for the course to be offered, like Northern communities and stuff like that. I mean, in this school. So it would definitely help the student if they were really driven to, uh, take the course themselves. And I think it's possible and it's relatively feasible with the amount of money it would cost, and that's it.

Myself: OK. Well, listen I want to thank you all for taking this extra time, and I know you've...

Participant #2 :I'm sorry. I'm sorry.

Myself: It's OK.

Participant #2. My apologies. I think that this, that this package. It would be very attractive to a lot of families where they have children who are gifted and who they do want to go to the Ivy League colleges and that kind of thing, you know, because it's for the scholarships. That's a very appealing part, but for the just sort of, the average student, who, who, you know, and they don't have that kind of money. They don't really plan on going to a really big university, they wouldn't be interested in this. So it would be just suiting to that, sort of that smaller group of the gifted students, and then among the gifted students, like Participant #4 was saying, there is some courses that I am sure this would work very well with, maybe some of the sciences and the math where you just do a lot of it on your own. It's just figuring it out in your own head, but for some of the, for some of the ones where it's, just the communication is a very important part of the whole process, like with Literature and all the different, like European and Latin and with some of the Art and language, I just think that's, that just the whole discussion is such an important part of the class that it, it wouldn't be the same, even if there was a chat room online. But I think that for those who are driven and for some things you, that you just can't get anywhere else, and like you did a third of your masters degree online... For something like that, I think that this is very ideal.

Myself: Thank-you. Anyone else have a comment? OK, this time, thank-you very much, enjoy your lunch, have a great day. I appreciate your time. Thank-you.

OPENING NOTE: April 19, 1999. The following focus group included one male and three females. All were Grade 11 students. None had enrolled in or experienced AP course work. One AP course, European History, was currently offered as a separate course in their school.

Because of a time mix-up - I was given two different times from two different people and believed that the final one was the scheduled one. The principal expected me to be there for the first one and scheduled the meeting accordingly. As a result, I did not get to meet with the group that had originally planned to participate in the study. The group I did meet with had not had the time to think about the concept of AP online prior to the day of the presentation, and they seemed less prepared to debate or to discuss the details of the idea. I often felt the need to repeat explanations and questions; longer pauses occurred between questions, and generally, responses were shorter and more generalized than I expected. Often participants simply agreed with the previous speaker. I spent far too much time speaking, filling in the pauses.

* * * * * *

Myself: OK. Today is April 19th, and it's 2:05. We're at ... and we're at School Site #1, and we're just beginning the focus group session. We're going to start with the very first question. Ah, do you feel taking AP courses would benefit you? Why or Why not? ...

Does anybody want to respond to that first question?

Participant #2: OK, Participant #2 thinks that it would if I did well enough, they could help me get scholarships.

Myself: OK.

Participant #1: OK, Participant #1 thinks that it would benefit me because, ah, I'm trying to get into the, ah, United States college, and if I did well in it, it would probably help out a lot.

Myself: OK.

Participant #4: Participant #4 thinks that, ah, it would help a lot because if I am trying to figure out, ah, more if I am studying, or going for studies in European History, if I took an AP course in European History, it would help. Ah, so when I go to, finally got to college, I would be able to understand a lot more than just going into it half-blind with just a history course.

Participant #3: Ah, Participant #3. I think that it would definitely benefit me as I am trying to get into university, into post-secondary education. Ah, it might not benefit some other people because they might not have the worth that we're, sort of the work ethic to do it, but I believe that it would benefit me definitely.

Myself: OK. Thank-you very much. Do you have any concerns about taking one or more AP courses? I know some kids in Saanich who are taking 5 AP courses in their Grade 12 year. I particularly .. I think that they might be categorized as some people that we should worry about a lot (feeble attempt at humour, no laughs) because taking 5 AP courses is an enormous amount of work; however, but the idea of taking one or more because someone might want to take, say one in humanities and one in Math or Science, or maybe a couple in Math and Science, something to that effect. Um, just the idea of taking one or more AP courses, does that sort of make you worry about anything?

Participant #2: Um, #2, I think that maybe it might affect your other courses, like, your normal ones, maybe. You wouldn't do as well if you didn't have as much study time for those ones.

Participant #3: Ah, Participant #3, I think that taking more than 2 is definitely going over the top. Ah, you've got to enjoy your Grade 12 year. That's just along the lines of just studying, plus the provincial

courses in Grade 12 are so tough, or I've heard that they're so tough, that taking more than two AP courses might just make you go insane sort of thing.

Myself: So your, your concern about that is based on the time consumption?
Participant #3: Pretty much, yeah.

Myself: OK.

Participant #4: Uh, #4, I kind of agree with Participant #3 because it takes a lot of your time and if you have anything else outside of school, like, if you're in basketball or any other sports, it would take a lot of your time, and uh, you've got to enjoy your school years. I kind of agree with Participant #3.

Myself: You make a really good point, Participant #4, about the idea of taking basketball and other things because when you guys go and put together your applications for universities, your marks are, of course, very, very important, but they're going to also ask what extra curricular activities have you been involved in, and what community volunteer services, if any, have you been involved in, and what they're looking for is someone with really good marks who also has done community service and ... or volunteer work, and um, some form of extra curricular work. So it is really important not to ditch all of those other things, just to get the marks, because if you ditch everything and can not show that you're rounded, that you haven't necessarily helped yourself. So that's a really good point. Time spent doing extra curricular and volunteer work is valuable time. So that's a really good point. Do you [to Participant #1] have anything, any concerns that you would have about taking...?

Participant #1: Um, OK, Participant #1 agrees with the other participants because, like, I'm really into tennis and different sports, and, like, I find it hard enough with some of the courses I'm taking right now. So if I did 2 or more or 1 or more AP courses, it would be kind of hard to fit everything in.

Myself: OK. Now, if you were to consider taking one or more AP courses, say one or two and especially you guys, you're on the semester system, right? So you could kind of, possibly, you could divide that up. Ah, do you have any specific concerns that wouldn't necessarily bother you if you were doing it in a regular classroom, but the idea of doing it online or through the Internet ... Once you've taken the course out of the classroom, put it on the net, you have to access your teacher and your course work and that stuff through the Internet, now does that particular change bring any, does that raise any concerns or issues with you?

Participant #4: Um, Participant #4, well, I think that sometimes, like, some people need to be explained more than once, things, or they don't understand things, but when somebody is standing there, telling you exactly what it is you're needed ... to be done, like, I don't know, for me, it's, I need a person-to-person kind of contact to understand some things. So...

Myself: OK.

Participant #4: That would be kind of my concern because you wouldn't have a teacher there to... If you all of a sudden had a question, you would have to either write it down, or I don't know, keep it in your mind until you were on the Internet and able to write your teacher.

Myself: OK.

Participant #4: That would just be one of them.

Myself: So you see that delay ...

Participant #4: Yeah.

Myself: ... between when you think of the question to the actual time you get to communicate that question... Good point. Any other concerns that you would have studying on the Internet at all?

Participant #3: Participant #3. Uh, well, technology isn't exactly perfect. Ah, you might have problems sending back and forth or computer crashes, whatever... Technology isn't perfect, but Participant #4 brought up a good point about the fact of availability, as well. So getting back and forth might be two or three days between, you know, corresponding with the person on the other side, and it, it would make it a little more difficult than being in a classroom, but it still would have its benefits.

Myself: OK, I think the way these courses run now, the ones that are on the net, it would be like a semestered or like a linear class, where if you usually would have course time: Monday Wednesday, Friday, for two hours, with a teacher in a classroom, say, then those would be sort of the hours that that person would be available to you, either through the telephone or online that you could just time back and forth to. And then, for beyond that, um, there would be a certain amount of time. I know when I was working... I did, I did a third of my master degree online, and I did it through Boise sate, Idaho, and there we had, the instructor had, other than weekends, ah, had 24 hours to get back to us, if we had a particular question, but most often somebody else in class would have an answer by then, and you would just send off a second message, saying, it's all right. But if it was something in particular, that you really needed to talk to the instructor about, they had so many hours to get back to you, and I expect that something like this would be set up in a similar fashion. OK, any other concerns about online instruction? Think of yourself, try to imagine yourself, OK, you're taking AP European History?

Participant #4: Thinking about it, yeah.

Myself: OK. And what about... what other, what courses... If you [to Participant #2] were to take an advanced course, what area would it be in? What would be your preference?

Participant #2: Um, probably, Participant #2, probably either music or biology.

Myself: OK. Suppose you two were doing this online, then, ah, try to imagine what it would be like, not having a class of other people doing this, and you're busy doing it. What sorts of things would that bring up?

Participant #2: Um, #2, it would be harder to get help from your peers, and um, also I'm kind more of a visual learner, so I don't know if I could, like, draw stuff over the Internet.

Myself: OK. So there would be drawings, probably little videos and diagrams.

(I did not respond to her concern.)

Participant #4: Oh, #4,um, I'd actually consider Biology if it was available, but, um, how would you go on with, certain things, like, experiments and stuff...?

Myself: Your lab work?

Participant #4: Your lab work, that would be kind of hard, don't you think?

Myself: Yeah, lab work, you go and do, and I'm not too sure since I'm not a Science teacher and I haven't sent it, but how you send the results of your lab work in. I think there's, um, there are, there are ways of doing it because there are Biology online courses, but having never taken one, I'm not too sure how they get around that. So, that's a very legitimate concern, "Hey, just a minute, what about the labs?" Did you [to Participant #1] have any concerns?

Participant #1: Well, if I were to take a AP course, it would probably, like Spanish Language or something, and I find it easier to learn languages, like, hearing it, and if you can just, like, read the language, it's probably harder than being able to really listen to someone speaking it.

Myself: Good point. Did you have any other concerns? No? All right, now let's, let's look back at the page prior to the one you're looking at. Now what we're going to look at here is, is we're going to look at the technological features that you have identified as necessary, helpful, or ideal in an Internet learning environment. How important would be, would it be to you to have telephone access to the instructor? Would that be absolutely necessary, something you had to have? Something that you would really like to have? It would be helpful in some situations. Or something you could pretty much do without? It would be great, but you could do without it? ... How important would that telephone access to the instructor be?

Participant #3: Participant #3, I think it would be helpful, like, being able to communicate with them, but it's not completely ideal. Like, you don't absolutely need it, but it would be nice. It would make it a little more easier.

Myself: OK. ... Anyone else? ... Think about it, if you had access to the instructor, if you could phone that person, and you were saying, Participant #4, earlier, that sometimes you find it hard to write down a question and look, and whereas, you would find it easier to say it...

Participant #4: Yeah, um.

Myself: Would that telephone access help with that particular problem?

Participant #4: Oh, #4, I'm, #4. Yeah, I think it would because, well, for me and if you have to hear things more than once, um, it would be easier just to ask some, ask them and have a response right away. So telephone access might be helpful to some people. I know it would be for me.

Myself: OK. ... Participant #1, what do you think about this telephone access? Would it be really, really important, or, um, not so important?

Participant #1: Ah, #1. Ah, I think it would be helpful in some ways, but, like, you probably wouldn't really need it. But if you have, like, a question that you have to answer, get answered right away and the Internet is busy or whatever, I guess you can phone them.

Myself: OK.

Participant #1: The instructor.

Participant #2: #2. If it ... I know lots of calls are long distance and stuff. So if it was free, that would be cool.

Myself: OK. Good point. Now what about telephone access to technical support? Remember, if you were going to do this, you would have your, your computer sitting there with your access to the Internet, right? And then once you were on the Internet and once you were connected to the site, through the Open School to wherever your course was sitting, um, then you would have another level of technology and that would be the software which ran your program. So, you've got your basic computer, either at home or here at the school that you're using, or possibly, both and then you've got the specific software you're using to do this course. So you've got those two levels of technical places where things could go wrong, right? So would you want to have access to technical support? How important would that be? ... To be able to phone a technician and say, "Look, such and such happened and I don't know how to fix it."

Participant #2: Number 2, I think that would be necessary. We have the Internet at home, and we, like, call that number quite a bit when we can't get on for some reason, so I think you are probably going to run into even more problems with doing a course over the Internet. So I think it would be ideal.

Myself: OK.

Participant #3: Ah, Number 3, I agree with Number 2. It's, it would be really nice to have someone who knew a little more than you about that sort of thing to be able to help you if you run into a problem.

Myself: OK. Thank-you.

Participant #4: Ah, Number 4, I do agree with both of, ah, participants Number 2 and 3. We have Internet also, as Number 2 said, and I know we've had weeks, at times, where we couldn't get through on the Internet, and I've had to call technical support to find help. I'd never have been able to get out of it without the technical support, so it is necessary, I'm sure.

Myself: OK.

Participant #1: Number 1, I agree with everyone.

(General laughter)

Myself: OK. It is interesting, you know. Depending on the service level of different, ah, sites, some people think, "Oh, it would be no problem," and other people who have personal experiences, who have run into problems, say, "Just a minute now, that's something I need." OK. How important then would online access to technical support be? If you now, um, as well as telephone support - if you can phone the guy and say, "I can't get on the net," or "I've got this problem," or "I've got that problem," that's good. But now think about , OK, if you're having problems, um, with a particular part of your program. How important would it be to have online access to a technical support, so that you could write it in and the next day get answer back for something specific?

Participant #4: Ah, Number 4, I think it would be helpful, but I don't think it's absolutely necessary because if it's something that can wait a few days, it's not going to be too much of a problem, but if it's really important, you can just always phone.

Participant #2: Number 2, I think that the telephone access would be, like, more handier than the ...

Myself: All right. Good point. What about you, Number 1? What do you think? What do you think about that online access to technical support?

Participant #1: Uh, Number 1, ah, I agree with Number 2 because I think using the telephone would be a lot handier.

Myself: OK. Participant #3, what do you think about online access to technical support?

Participant #3: Ah, it's probably [not?] necessary. I mean, it's not really... If you can get on the telephone, it's, like, it's a lot easier and, like I said before, it's, email isn't perfect, so ...

Myself: All right. Now, the next three, the next three sets: email access to your instructor and other students, bulletin board access to your instructor and other students, and chat line access to the instructor and other students, do you know the differences among these three?

Participant #4: Um, Yep.

Myself: Do you know what the difference is between a chat line and a bulletin board is, for example?

Participant #2: Yeah, Number 2 does.

Participant #1: Number 1 does.

Participant #3: A little more about a bulletin board might be nice. I know what a chat line is, but a bulletin board, it might be nice to understand what it is.

Myself: Oh, OK. All right, well, the reason I asked about that is, I assume that you guys all use email, right?

Yeah. Yep.

Myself: OK. What... there is a new program out and it's the sort of industry, it's become the industry standard. I typed this up. I designed this study in October. Since that time there's something, a new software that's been released, and ah, it's getting readily available, and this program would probably be made with this software. And Web Board is basically one software program that has all of these options built into it. What happens with Web Board is, it looks like a bulletin board. It's got the, sort of title across the top, and it'll have columns going down it. And in those columns there will be dialogues going on. There might be a full-group discussion in the first column where everybody is, you know, the professor or the teacher has thrown out a comment because sometimes AP courses are taught by professors, not teachers. That does happen. Um, so the professor or the teacher will be throwing out a question to the whole class, and then people's sort of ... tentative or first responses, they will be typing them in there. So the whole class is trying to [answer]. In the second column, there might be: Conference #1, Conference #2, Conference #3, Conference #4, etc. and each of those represents small-group discussions going on, on different topics. So if you might answer, you know, send in a short answer, to a question about, um, the fall of Napoleon or something to that effect in the full-class discussion, you might put, you might put out, "Well, it could have been such and such." Then you might go to the small group discussion, where you know it's just the four of you and you're working on a group project, and so you're having this conversation that nobody else gets to eavesdrop on, and so you're communicating amongst yourselves, and then you might go over to the third column and you might type up a message and you would just send it to Participant #4, and Participant #4 would just send her answer back to you, and no one else would get to read that. So, it's kind of like all of these things, all of these kinds of communications are going on at the same time. Now, the full-class discussion might be synchronous time; everybody is on there at the same time, you know, "Be there at 3 o'clock on Thursday and I want, you know, and then everybody types in as they go, right? Whereas, the small-group discussion, you might say, "OK, over the next four days, I want you to send in your chunk. I want you to send in your chunk, so they would be coming in at different times. Being added. And then the email access to the instructor, you might email it off now and you might get it back 24 hours later, right? So these three, on Web Board, all these are going on at the same time. Do you think...which ?

As well, it's been shown, the research has shown, very strongly, that in order for young people or other people, anyone studying online, in order for them to be successful, this is the only classroom in which teachers must encourage people to talk about stuff like the weekend and stuff like this beyond their classroom. Isn't that funny? The reason for it is because when you're studying online, you never see each other. You don't say, "Hi," or "How are you?" You have none of those things to ... available to you to know each other. So the chat line, the reason they put chat lines and the reason nobody much monitors them in an online learning setting because it gives you a place to say, "Hey, you know what, I really like to ski. Is there anybody else in this class who really likes to ski?" or "You know what, I really like to ride horseback," or "I really like to go on trail rides," or "I really like to do... whatever." So there is a place where you can get to know each other because when you're working together in small groups or you're making comments into a larger group, it's really nice to have a sense of who's out there listening, and the way that people most comfortably get a sense of who's out there listening is by being able to, sort of develop a personality that people can react to and communicate that personality to their, ah, the rest of the people in their class. For example, when I took my classes though Boise State, in two out of three classes,

there was... it was very odd, it was... We were working on science at the time, and, um, so there were a very, very different group of people in this class, like, about 80 per cent of the people, 75 per cent of the people, I guess, maybe, in the class were US airline pilot instructors; there were a lot of firemen from New York city; and there was one teacher, that was me; and there were a couple of pharmacists. And this is who was in the class, and we really didn't know how to talk to each other. Over the course of the a few, a couple of years, we got to know each other a bit through this chat line. And there was this guy named cliff; I just hated him. I had, I had never seen the man, I just ... but we had this wonderful little option where you could go down the list of people's names and you could turn people off, so that you just didn't ever have to listen to them, and that's the only person I ever... As soon as I'd enter a new class, I'd check the new class list and click: I don't want to hear about it, Cliff. Ah, anyway, so people do get a sense of people's personalities in these contexts. And, of course, Cliff knowing, Cliff would never know that I had done that because you did't get little messages, "So and so doesn't want to listen to you anymore." So it isn't quite the way you'd get that in a classroom. If someone was not wanting to listen to you will, right? Whereas, you don't. But anyway, these things...

This email access to the instructor, how important would it be to have one-to-one access with the instructor where no one else was in on the conversation? That's really what that is looking for. That's what it is asking about. How important is that?

Participant #3: Ah, Number 3. One-on-one is important because, like, there's no one there to sort of judge you on what you're asking, so sort of one-on-one, you can ask anything you want and the teacher's the only one that will actually understand, so it's a sort of a sense of security. And, ah, it's just, it's just a little, like when I, when I have something to ask, I don't like asking questions that people, other people might know, in class. When you're asking one-on-one, it doesn't really, it, it doesn't even strike through my mind that the teacher might mock me as in, as some person in the class might.

Myself: Good point.

Yeah.

Participant #1: Yeah, Number 1. Ah, and I agree with Number 3 because sometimes you're afraid to ask a question out loud in class because, like, it might be some dumb question that other people may think ... or something like that. And, oh, I think one-on-one would really help with the instructor.

Myself: OK.

Participant #2: Ah, Number 2. I think the only problem with that is, say you have an assignment due the next day or something, and you don't know when they're going to get back to you, but um, I think that telephone access to the instructor would also be good.

Myself: OK.

Participant #2: As well as email.

Myself: OK, good point. Any comment on that one [to Participant #4]?

Participant #4: No.

Myself: OK. what about being able to talk one-on-one to other students, just without anyone overhearing? One-to-one conversation with other students in class, how important would that be? Or how valuable would that be?

Participant #4: Oh, Number 4. I think it's kind of good to talk to people in your classes. I don't know, it helps you build social skills. I think you might need them .. kind of, we were talking about, you don't even

know them and you're telling them , like, what you think about, well if it's in a political class or something and you're telling them what you think about the world, but they don't really know, you don't really know, you haven't met them... I don't know, it's just, I think it would be a really good idea to meet your, kind of meet them in a way.

Myself: All right. One of the things that is being developed are these little video camera that are about this big, that sit on the top of the computer, yeah. Or one thing that is very easily done on Web Board is, at least a portrait Bio, you know, like a little portrait, the way you would, you know, like school-sized photo, with a little biography that would be maybe three or four lines long, so there is that general introduction. People get some sort of first sense of you. And then again, as you say, through emailing each other back and forth to build on that. OK. Any other comments about having email access to other students? How important that would be or not? ... OK.

Bulletin board access to the instructor, well, um, this would mean being able to place something on the bulletin board ... Suppose you guys were a small group, and you were working on the bulletin board and you were working on the bulletin board through a conference on a project, would you want to be able to email your instructor and say, "Go look at this project, look at how it's shaping up. We have got our preliminary version on there, and let us know where we need to improve it." That kind of thing. ...

OK, a place for sort of preliminary screening of work. A place to have full-group discussions, how important would that be to you? ...

Would that be, ah, of course, the alternative would be sending assignments back and forth once they're all complete.

Participant #2: Ah, Number 2. I think that a teacher's input while you're working on something is important to make sure you're on the right track.

Myself: OK.

Participant #3: Number 3. I agree with Number 2. It's always nice to know, you know whether you're wasting your time or whether you're doing a good job and that you should continue working like you are.

Myself: OK.

Participant #4: Number 4. I think that it would be a really good idea because it's good to have working up-to-date, then on, kind of what your teacher thinks about your project and stuff like that.

Myself: [Participant #1] No comment?

Participant #1: No.

Myself: All right. What about this business of chat line access. OK. Chat line access to the instructor, would you want to talk to you instructor about just sort of everyday things? Would that be important or would you even want to do that?

Participant #1: Ah, Number 1. Um, I don't, I don't know, like it would probably, like I probably wouldn't really chat with my teacher, but...

Myself: It's really strange, isn't it? This come up because a lot of students have identified a concern about a lack of social interaction with the teacher. I bet if we went around this table and if I knew the names of, well, one of your teachers or your principal or something like that, and said, "What do you think about Mr. So and So?" You'd each have an impression, right? How do you get that impression? Well, you get a social impression through the contact that you have. Here it's much more difficult to get a social impression of

what a person is like. So that is why that's included in there, but I don't see you guys getting all ... (In response to a gesture... What time is it? It is 2:35. How much time do we have?)

Participant #3: Ah, 20 minutes.

Myself: OK. You're going to get done a little bit early, I think. Um, would anyone here do it though? Would you, in that setting, actually talk to your instructor about ... fishing? I don't know.

Participant #3: Number 3: I really don't think so.

Myself: You don't think so.

Participant #2: Number 2, if I was bored, maybe.

(Laughter)

Participant #4: Ah, Number 4. I don't think that I would do it. Unless, maybe if the instructor was talking with, like, all of the students, but I don't think that it would be something that I like to do really.

Myself: OK.

Participant #4: I just don't like talking to teachers about the weekend.

Participant #2: Maybe, if he was good-looking or something...

Myself: OK. all right. Chat line access to other students, how important would it be to you, do you think, to be able to talk to other students about social things that have nothing to do with the class?

Participant #3: Number 3. I think that would make a little more sense than talking to your teacher.

Myself: OK.

Participant #3: Ah, talking to someone who could actually be your peer, rather than talking to someone who's quite a bit older that you might it make it a little more easy to talk more relaxed, sort of in that different environment.

Myself: Good point.

Participant #4: Ah, Number 4. I think I agree with Number 3. It's easier to, when you're , if you have class discussions, you'd know who you're talking to and it'd just be easier to talk a little.

Participant #1: Number 1. I agree with the other two, like, you could make new friends and stuff so...

Participant #2: Number 2. I agree too.

Myself: You're an agreeable lot, you guys. You, you're really the first group that I have interviewed where great debates didn't break out, where people disagreed strongly with each other, especially on the difference between telephone access and online access. So, there is usually this huge division - half the people over here and half the people over there and they're arguing. Anyway, we didn't have to do that today. OK. Now, I need you to tell me what your, sort of final thoughts are, you know, when I approached you and said, "How about AP online, over the Internet, um, what sort of ... Do you think of this as a positive thing? A negative thing overall? Just your general response about that, just a general comment, if I could get one from each of you. Just some sort of... What was your impression when I presented you with that idea?

Participant #1: OK. Ah, Number 1. I think, like, this AP thing over the line would help for some people, and like, if you have lots of time and you're dedicated to do it everyday, but for other people that are really busy with sports and other school work, it might not help too much, but ...

Myself: OK.

Participant #2: Number 2. I think for, especially people in small towns, like we are, we don't really have many AP courses to choose from, so this would give us more choices and maybe a better opportunity to do well in life.

Participant #3: Ah, Number 3. I think that it really depends how you look at it to say whether it would help you or whether it wouldn't. Um, the, having the option to do all those courses is a nice way, but there's some people that would sort of look at it, going what about the teachers and other things like that, but personally I think it is a good idea because, like Number 2 said, it's a good way to get people in smaller towns an option to look at broader topics.

Myself: Thank-you.

Participant #4: Ah, Number 4. I think it's really a good idea. At first I was a little shocked because, well, having your class online sounds a little funny sometimes, but ah, I think, now that I thought about it, I think would really help, ah, because when, if you have, if it was kind of set up like ours, we had... We would have a meeting on Mondays and Thursdays from 3 to 4:30 or whatever times it was set up, if it was like that and then you had on your own time you'd do your work. I think that would help a lot if you had, like, class discussions from 3 to 4:30 or something like that. It would help a lot.

Myself: OK. All right, any closing thoughts about participating in this study? Was it a positive experience? Interesting? Negative? Boring? Whatever. Feel free.

Participant #4: It was cool.

Participant #1: It was better than Math.

Myself: Oh, well. Well, that sounds really good. ...

No. You don't have to make a comment on that. That's totally optional, obviously. ...

All done?

Participant #3: All done.

Myself: So there's only for me to say, "Thank-you."

F.2.d: Transcripts of the Written Responses to Focus Group Questions

Each participant received a full questionnaire that displayed, on the final page, the focus group questions. Those participants who were not involved in focus group sessions were invited to add written responses to those questions on which they wished to make comments. Time restraint was one limit on the number of participants who chose to do so. At those sites where focus groups were held, the perception that focus group participants would represent their peers, may have been a second limiting factor.

The following log records those written comments:

OS-S1-2: Q.1 Taking an AP course would, I think probably benefit me because it might prepare me better for university although I would need a little more information about the AP courses.
Q.2 One concern that I would have would be the cost perhaps, and the fact that I would really have to motivate myself to do the course unless I would have a block at school to do it.
Q.3 Again the cost.
Q.4 I think that it is very important to have access to your instructor by telephone and email especially. Also it would be helpful to communicate with other AP students.
Q.5 Taking an AP course through the internet would probably work quite well.
Q.6 I think that participating in this study is good because it opens my eyes to something I didn't know even exists. Also, since I'm only in the tenth grade it kind of helps me to look at some possibilities for the future.

OS-S1-8 Q.1 I think that AP courses would benefit me, but it's hard to say what time-frame I would be able to fit into.
Q.2 Again, the time length would have a great affect.
Q.3 As long as there were people I could contact and maybe someone with basic knowledge at school, I wouldn't be too concerned.
Q.6 I think it's a great opportunity for anyone who has the opportunity.

OS-S2-7 Even though I am graduating this year I have a younger sister who is in grade 10 who is very interested in enrolling in a few AP courses.

PG-S1-2 I feel that if these courses can make that much of a difference, I would rather take a year off after high school to attain honour credits toward a good university than take out a huge student loan just to upgrade college. I would like any information possible in this program, and hopefully be able to complete a few courses to my advantage.

PG-S1-9 Q.1 I think they would be helpful because I don't need to try very hard in school to get really good marks, and I'm afraid that I won't be prepared for the workload at university.
Q.2 No.
Q.3 No.
Q.4 I think that bulletin board, and email are necessary for communication, but the course could be run without email or chat access to other students. All the other things would be good, but not completely necessary for running the course.
Q.5 Go for it! I would still be in high school when these courses are in place.
Q.6 None.

PG-S1-10 Q.1 I think that taking an AP course would benefit me because it would give me a challenge and I would be able to go to a university of my choice with the aid of scholarship money awarded.
Q.2 No.
Q.3 No.
Q.4 I believe that telephone access and email access are necessary. The bulletin boards are probably extremely necessary. Chat lines would also be very beneficial.

Q.5 My closing thoughts are that this is a very interesting project and I would hope that it would soon be available. They need to think about the price and make it more affordable to students who are children of farmers.
Q.6 I was very interested and was intrigued by this AP study. The possibility of myself entering this course is high and I was glad I could participate in this study.

PG-S2-6

Q.3 I would just worry that I wouldn't always be able to ask questions or make clarifications through the Internet when I needed to - like I can in the classroom.
Q.5 I think AP courses on the Internet would be really beneficial - especially for people who don't have room in their timetable for AP.

PG-S2-17

Q.2 Spending $740 and possibly failing the final exam or finding the course too hard. Some way to get out if you don't like it is needed.

NO-S1-2

Q.1 Yes, save some money.
Q.2 No.
Q.3 No.
Q.5 It would be great.
Q.6 Easy.

N0-S1-3

I feel this course would help me because at the moment I have no other option but to just teach this to myself.

GV-S1-1

Q.1 I feel that my AP English course has helped me because the work is much more challenging than regular English.
Q.2 Yes, the cost. The reason why I'm not taking the AP English exam is that I can't afford it.
Q.3 No, as long as there was telephone access to the instructor.
Q.4 I think that it is very helpful to have either telephone, email or bulletin board access an instructor or another student taking the course because if one needs help, they need to be able to contact someone.
Q.5 I think that AP courses through the internet are a good idea because a student can complete the course completely at their own pace.
Q.6 I enjoyed participating in this study and I am glad to know that people are interested in students' input and ideas.

GV-S1-2

Q.1 Yes, I believe taking AP courses would benefit me because it is a chance to be more challenged compared to the usual BC curriculum.
Q.2 The only concern that I have in taking one or more AP courses is the cost of these courses and finding the time to maximize the opportunity.
Q.3 No.
Q.4 I believe that to succeed using an internet course you also need the access to other people to help and guide you through the course. I am previously taking a course through the Open School using videos and print material. I find that I often have questions and need to call my tutor to explain them. This is an essential aspect in creating online courses.
Q.5 Taking AP course through the Internet is a great idea, but should not take over your usual academics, as a classroom environment is an important way to learn as well.
Q.6 I hope this was a help to your studies.

GV-S1-3

I personally would prefer to take AP courses in a classroom setting rather than online, although I recognize the advantages of offering them online if they are otherwise unavailable. I would very much dislike to see online courses replacing regular courses. I

F.2.d: Transcripts of the Written Responses to Focus Group Questions

am also somewhat concerned with language programs being offered online as I find that conversational skills can only really be practiced with other students and instructors.

GV-S1-5 The experience of the exam should help in preparation for post- (high school) graduate studies.

APPENDIX G
Scholarship Question

Subject: Re: Fwd: Scholarship Question
Date: Tue, 13 Apr 1999 11:43:31 -0700
From: [redacted]
To: gale_parchoma@bc.sympatico.ca

Gale,

Your request was forwarded to me for response by the [redacted]. While there is not a great deal of information that we can provide I will let you know what consideration is given to scholarship applicants who have taken AP and IB courses.

Initially all courses are considered in the same manner. That is, that even though a course is designated as an IB or AP course, for admission to the University, that course would be considered a 'regular' course. For scholarship purposes, the University uses admission averages generated from all (regular) courses to establish a short list of students who go on to have their applications considered by a committee. It is not until the committee level that IB and AP courses are considered. At this a student would be recognized for having taken more challenging level of course work. Their breath and depth of study would also be considered, as well as all other extra curricular activities.

I hope that this small tidbit of information is helpful to your study.

Thank you for your interest.

[redacted]
Scholarship Coordinator
>>>
>>>Dear [redacted]
>>>
>>>My name is Gale Parchoma and I am a graduate student at the University
>>>of Victoria. I am researching the role (if any) that AP or IB credits
>>>play in undergraduate scholarship selection committee decisions. Do you
>>>know if there is a way I can get data on this topic?
>>>
>>>Thanks in advance.
>>>
>>
>>
>[redacted]
>>Director of Admissions
[redacted] University
[redacted] Drive
[redacted] BC [redacted]
>>Canada
>>
>>Telephone: [redacted]
>>FAX:
>>Internet: [redacted]
>>Please visit our Website at www[redacted]ca
>>
>
>
>
[redacted]
>Senior Student Recruiter
>Office of the Registrar
[redacted] University, [redacted]

VITA

Surname: Parchoma Given Names: Gale Ann

Place of Birth: Shellbrook, Saskatchewan

Educational Institutions Attended:

University of Waterloo	1983 to 1985
University of Saskatchewan	1983 to 1993
University of Athabasca	1989 to 1991
Boise State University	1995 to 1996

Degrees Awarded:

B.Ed.	University of Saskatchewan	1988
B.A.	University of Saskatchewan	1993

Publications:

Beach C., Bentley, S., Dare, V. & Parchoma, G. (1997). Resources for multicultural / antiracist education. (Available from the British Columbia Teachers Federation, PD Division, #100 - 550 West 6th Avenue, Vancouver, BC V5Z 4P2)

Parchoma, G. (1981). Paper thoughts collection #99. In The Saskatchewan poetry book. (p.40). Regina, SK: Saskatchewan Poetry Society.

Parchoma, G. (1988). The western mass media: An apolitical institution? Online, 6 (2), 1-11.

Parchoma, G. (1998). Honesty: Is it the best policy? In R. Chase & L. Daniels (Series Eds.), S. Butler, H. Husarski & N. Shae (Vol. Eds.), Critical challenges across the curriculum: Vol. 6. Critical challenges in English for secondary students (pp. 107-114). Vancouver, BC: Critical Thinking Cooperative.

PARTIAL COPYRIGHT LICENCE

I hereby grant the right to lend my thesis to users of the University of Victoria Library, and to make single copies only for such users or in a request from the library to any other university, or similar institution, in its behalf or for one of its users. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by me or a member of the University designated by me. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Title of Thesis:
An Advanced Placement Online Feasibility Study

Author: [redacted]

Gale Ann Parchoma

Date: July 29/99