



Evaluation of Fall 1999 Online Classes

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Table of Contents

| | |
|---|-----------|
| Executive Summary | 2 |
| Introduction | 5 |
| Research Design and Method..... | 5 |
| Enrollments | 7 |
| Student Demographic Profile | 10 |
| Gender | 11 |
| Age | 12 |
| Ethnicity | 13 |
| Student Success..... | 15 |
| Course Attrition..... | 16 |
| Tests of Significance/Correlations/Regressions | 17 |
| Correlations | 18 |
| Predicting Student Withdrawal from Online Courses - Results of a Logistic Regression..... | 18 |
| Grade Distributions | 19 |
| Student Opinions | 24 |
| Responses | 24 |
| Discussion and Implications for College Practice..... | 32 |
| Appendix 1..... | 35 |
| Appendix 2..... | 37 |
| Appendix 3..... | 38 |
| Appendix 4..... | 40 |

Executive Summary

The purpose of this study was to explore the demographic and academic traits of Fall 1999 online students, to compare them with those of Santa Barbara City College and peer traditional students (students enrolled on campus in ACCT 230, for example, as opposed to students enrolled in ACCT 230 online) and to investigate the opinions of online students regarding their online course delivery experience. The study combined data from SBCC's student data system with students' responses to a questionnaire. The questionnaire was first mailed on October 20, 1999. A follow up was mailed on November 17, 1999. The response rate was 50.6% and the respondents were representative of the online student population.

The development and implementation of online course delivery is a challenging task for any institution. Santa Barbara City College has evolved considerably in only five semesters in the breath, quality and quantity of online course offerings. Student satisfaction with all aspects of online course delivery is very high and, as summarized below, most of them expressed interest in repeating the online format.

This study represents a first comprehensive attempt to evaluate online course delivery at SBCC and reflects data for one semester. In order to better understand and track the progress of online courses, further studies are needed that will compare data from multiple semesters. The findings of this study should be viewed as formative evaluation meant to inform the College community and facilitate improvement rather than summative conclusions leading to final decisions about the effectiveness of online course delivery. It is our intention to continue these studies and to incorporate a comparative approach of multiple semesters.

Course Offerings and Enrollment

From two online courses offered in Fall 1998, the College has expanded its online courses offerings to 28 different courses in Fall 1999 and 46 in Spring 2000. Of the Fall 1999 online courses, 17 were totally online (no on campus attendance required), 7 were hybrid (most instruction is online and some on campus attendance is required) and 4 were partially online (most instruction is on campus with an online instructional component). The growth in online course enrollment has also been very rapid, demonstrating that the College is responding to the needs and preferences of students and attracting students who would not have otherwise enrolled at the College. A total of 655 students enrolled in at least one online class in Spring 1999, 1,176 in Fall 1999, and 1,366 in Spring 2000 (as of March 23, 2000. It is estimated that the total number of students enrolled in online classes in Spring 2000 will reach 1,500).

10% of the Fall 1999 online students took an online course in prior semesters and 11% repeated the online experience in Spring 2000. 447 (38%) of the Fall 1999 online students enrolled only in online classes. These students would not have enrolled at the College if online delivery were not available. The unduplicated online enrollment as of the Fall 1999 census day of classes represented 7% of the total unduplicated headcount. This percentage suggests that online enrollment has already become an important part of the overall college enrollment.

Student Demographic Characteristics

The Fall 1999 online students have a slightly higher percentage of female students - 56% - compared to 50% for SBCC and 51% for peer on-campus courses. Overall, online students are comparable in terms of age to the college average and slightly older than students in peer on-campus courses. The ethnic distribution of online students closely mirrors that of SBCC and peer

courses. This is an important finding of the study as the College strives to represent the ethnic and gender make up of the community, in general. The nature of course offerings in Fall 1999 skews the ethnic distribution by type of online class. The partially online classes have a higher representation of Hispanic students than the other online courses because these courses generally attract more minorities. Examples include English as a Second Language and Chicano Studies. The three demographic characteristics combined indicate an emerging pattern. Hybrid courses tend to consist of white females of an average age of 31. Totally online classes are still dominated by white females, younger, but there is a better gender balance than in hybrid courses. Partial courses are dominated by younger male students and, as explained earlier, there are more minority students than in the other types of online classes.

Student Success

The area of student success reveals both areas where the online course delivery has made progress as well as some areas that need improvement. Overall, the course attrition is higher for online courses than for SBCC, in general, and for peer on-campus courses, in particular. Hybrid courses exhibit the highest course attrition rate by the census day of the courses. 47% of hybrid course students dropped their courses by the census day. However, the number of hybrid courses is significantly lower than that of totally online classes. Totally online courses, which represent the majority of online offerings, have a low attrition rate by census: 18% compared to 24% for the college and 23% for peer courses. The attrition after the census day of the courses is very similar for the three types of online courses: 23% for hybrid courses and 24% for totally online and partial courses. These rates are higher than the SBCC rate of 16% and the peer course rate of 15%. It is important to note that SBCC's attrition rates are lower than those experienced by other colleges offering online instruction. One factor that contributed to the higher after census attrition in Fall 1999 online courses compared to SBCC and peer courses is the phenomenon of "hidden" withdrawals. All courses have a deadline for dropping the class without a "W" being assigned to the permanent record of the student. In traditional on campus classes, faculty can easily identify and record "no show ups" – students who registered for the class but did not attend the first class sessions – and students who withdrew before the census day of the class. In online classes, however, students who are not aware of the drop deadline or who do not make their intention known to the instructor, can easily "hide" without the instructor being aware of their intention by the census day of the course. This explains the shift in withdrawals for totally online classes from before the census day of the course to after the census.

Trying to predict the probability that a student will withdraw from an online course has not been revealing. The various variables available in the student data system used in a logistic regression explained only 18% of the decision to drop an online course. Clearly, more research is needed to pinpoint more closely the reasons for student withdrawal, assuming that there are other, academically related reasons besides the personal ones.

In Fall 1999, 52% of online students received a passing grade (A, B, C, D or CR), compared to 73% of students in peer courses and 71% of SBCC students. According to a recent article in the Chronicle of Higher Education, this situation is common for many colleges offering online courses. Hybrid courses are an exception, with higher percentages of both successful and passing grades than the other two types, when Ws are included in calculation. The gap between online courses, the college and peer courses becomes smaller when the grade distribution is calculated only for those who persisted through the end of their courses (excluding Ws). Without Ws, online classes, generally, are still behind the college and peer course averages, but the improvement is visible. Again, this indicates that if the "hidden" withdrawal phenomenon is resolved, the grade distributions in online courses will more closely mirror those of traditional courses. Hybrid courses

are the closest to the college and peer course averages if Ws are not included. This suggests that those who persist in this type of classes do better grade-wise than their counterparts in totally online and partial courses. This seems a normal consequence given that students in hybrid classes have higher GPAs than students in the other two types and have completed, on average, a larger number of units at SBCC. This indicates that these students have had better academic success at SBCC and have formed a discipline of study through their prior courses.

Student Satisfaction

The student opinion and satisfaction survey reveals that online course delivery is highly responsive to the students' needs and preferences. Students praise the flexibility of the format, the quality of offerings, and the feedback from instructors. 68% of the respondents indicated that they like online courses equally or better than on campus classes. 73% of respondents indicated that they would take another online class and 21% were inclined but not positive that they would repeat the online format. 80% of respondents felt that the feedback they received from their instructors was very helpful and 45% indicated that the online interaction with other students is beneficial to their learning. 56% of the respondents took the courses to meet general education or major requirements.

Students were not exactly sure of the difference between online and traditional courses regarding the improved mastery of course content due to the online format. 31% of the respondents indicated that they understand ideas and concepts better than they would in a more traditional class and 39% of respondents said they are better able to visualize the ideas and concepts presented than they would in a more traditional format.

The majority of students do not feel that they had technical difficulties in accessing their online course materials. 77% of respondents felt they did not spend much time trying to access the course site on the Web and 85% thought that they have the necessary computer skills.

From the students' responses, it is evident that online courses achieve one of their major purposes, which is to provide the flexibility that many students need to engage in college education. 88% of the students indicated that they are better able to juggle their coursework with their other work and personal responsibilities than they would in a traditional format. 36% of the respondents indicated that they would not have taken the course if it were not available online and 55% would have taken it on campus only if it were offered at a convenient time. Their presence in the online class indicates that this format provided the time convenience students needed. 62% of the respondents worked at least 21 hours per week, with 46% working more than 30 hours per week.

Although 73% of the students indicated that they would characterize their online classes as at least equally demanding compared to on-campus courses, their grade expectations exceed the real outcome. 91% of the respondents thought they would receive a passing grade. This suggests that students believe online courses would be easier to pass than traditional classes. Students do not seem to engage enough in the general online orientation before beginning their courses. Of all online students who responded to the survey, 34% did not take the general online orientation and 40% of totally online students did not either. However, since each of the online courses offers its own online orientation, it is likely that students participate in the course specific orientation rather than the general one.

Introduction

Santa Barbara City College (SBCC) offered its first two online courses in Fall 1998. This expanded to 14 different courses in Spring 1999, 28 in Fall 1999 and 46 in Spring 2000. A total of 655 students enrolled in at least one online class in Spring 1999, 1,176 in Fall 1999 and 1,366 in Spring 2000 (as of March 23, 2000). Due to the relatively recent start of online course delivery at SBCC, little is known about the characteristics of SBCC online students as a group and as they compare to the SBCC student population, in general, and the students enrolled in on-campus similar courses, in particular.

The purposes of this study are:

- 1.) to determine the demographic profile of students registered for online classes in Fall 1999, their prior enrollment in online classes at SBCC and their success in the Fall 1999 online classes;
- 2.) to compare the profiles of Fall 1999 online students to students enrolled in peer on-campus classes and SBCC, in general;
- 3.) to explore the opinions of online students about online course delivery at SBCC;
- 4.) to test and refine the methodology;
- 5.) to establish baseline data.

It is anticipated that the findings of this study will inform the college administration and faculty about the characteristics of a group of students which is becoming an important part of SBCC and provide guidance in making decisions about the format and delivery of online courses in upcoming semesters.

Research Design and Method

This study combines an exploratory design with a survey instrument to investigate the demographic makeup and academic success of Fall 1999 online students compared to peer on-campus classes and the college average and their opinions about and satisfaction with their SBCC online classes. Since the desired outcome of the study is to inform the college and facilitate the improvement of online course delivery at SBCC, the research design and the characteristics investigated were selected in agreement with Pablo Buckelew, the Dean of the Online College.

The first three sections of the study – Enrollments, Student Demographic Profile and Student Success – were developed using data from the SBCC student data system. All figures, unless specified otherwise, reflect enrollments (either duplicated or unduplicated) as of the census days of the courses, which did not necessarily coincide with the census of the Fall 1999 semester (September 13, 1999). Thus, the enrollment figures in the Enrollments sections are somewhat higher than those reported as of the census day of the Fall 1999 semester.

In all these sections, the data is presented for all online classes, on-campus peers of online classes (see Table 1 for a list of Fall 1999 online classes, on-campus peers – for example if ACCT 230 was offered online its peer would be the ACCT 230 offered on-campus, if applicable) and SBCC overall. The data for online classes is further presented by type of online class. Three different types are identified: hybrid (most of the class work is online with a number of required meetings on-campus, usually once a month), totally online (no on-campus meeting is required) and partial (most of the class work is done on-campus with an online component). Twenty-eight

different online courses and 33 different sections were offered in Fall 1999. The courses included 7 hybrid (25%), 17 totally online (61%) and 4 partial (14%). The sections were distributed as follows: 8 hybrid (24%), 21 totally online (64%), and 4 partial (12%).

Table 1. Fall 1999 Online Courses and On-Campus Peer Correspondence

| Online course(# of sections) | Had an on-campus peer in Fall 1999 |
|------------------------------|------------------------------------|
| Hybrid courses | |
| ACCT 230 (1) | Yes |
| ACCT 240 (1) | Yes |
| COMAP 101 (2) | Yes |
| COMAP 113A (1) | Yes |
| COMM 161 (1) | Yes |
| ENG 111 (1) | Yes |
| HE 101 (1) | Yes |
| Totally Online | |
| BIOL 120 & 120L (2) | Yes |
| BIOL 151L (1) | No |
| BIOL 151S (1) | No |
| BIOL 98 (1) | No |
| CNEE 131 (1) | No |
| COMAP 103 (2) | Yes |
| EARTH 101 (1) | Yes |
| ESL 107 (1) | No |
| HIST 103 (1) | Yes |
| HIT 100 (1) | No |
| HIT 150 (1) | No |
| HIT 200 (1) | No |
| HIT 240 (1) | No |
| PE 163A (1) | Yes |
| PERDV191A (2) | Yes |
| PHIL 101 (1) | Yes |
| SPAN 115 (2) | No |
| Partial | |
| CHST 101 (1) | Yes |
| ENG 110 (1) | Yes |
| ENG 70 (1) | Yes |
| FR 102 (1) | Yes |

The fourth section of the study – Student Opinions – presents the results of a questionnaire administered to online students during Fall 1999 (see Appendix 1 for a copy of the questionnaire). The responses to some of the questions are also combined with information from the student data system in an attempt to compare students’ responses with actual information (such as students’ expectations related to grades and the actual grades they received) and make inferences about student satisfaction with online courses.

All students enrolled in online classes in Fall 1999 (except for those enrolled in ACCT 230 and ACCT 240) received the questionnaire regardless of their enrollment status at the time of the survey administration (e.g., students who dropped the class were also included). The questionnaire was first mailed on October 20, 1999. A follow up was mailed on November 17, 1999.

A total of 904 questionnaires were mailed: 34 were undeliverable due to incorrect mailing addresses in the student data system, and 440 were returned giving a response rate of 50.6% (the rate of response is calculated based on the 870 questionnaires that reached their destination).

The distribution of students who received the questionnaire compared to that of those who returned it by various characteristics (percent gender, ethnicity, and type of online course enrolled in) is presented in Table 2. The differences between recipients and respondents are very slight. Thus, it is safe to assume that the respondents are representative of the survey population in terms of gender, ethnicity and type of online course registered for.

Table 2. Differences between survey recipients and survey respondents

| | Returned survey | Received survey | Diff. |
|---|-----------------|-----------------|-------|
| % Gender | | | |
| Female | 62 | 57 | -5 |
| Male | 38 | 43 | 5 |
| % Ethnicity | | | |
| White | 69 | 68 | -1 |
| Asian | 6 | 6 | 0 |
| Black | 2 | 3 | 1 |
| Hispanic | 18 | 18 | 0 |
| Unknown | 2 | 3 | 1 |
| Am. Indian/Pacific Islanders | 2 | 2 | 0 |
| % Type of online course attended | | | |
| Hybrid | 15 | 14 | -1 |
| More than one course/different types | 27 | 25 | -2 |
| Totally Online | 48 | 47 | -1 |
| Partial | 9 | 12 | 3 |

Enrollments

As mentioned at the outset, the total unduplicated number of students who enrolled in at least one online course in Fall 1999 reached 1,176. Of these, 957 (81%) were still enrolled in at least one online class by the census day of the class (see Table 3). As of the course census, the majority of the students were enrolled in totally online classes (77%), with the rest split between hybrid (18%) and partially online classes (5%) (see Table 4).

In most cases, the enrollment at the census day of the course was much higher in on-campus peer courses than in online courses due to the greater number of sections available for on-campus classes (see Table 5). The only exceptions were COMAP 113A (Introduction to MS Power Point), BIOL 120 & 120L (Natural History) and PERDV 191A (personal development course, mostly offered to high school students).

The majority of Fall 1999 online students enrolled in only one online course (81%). However, others took a heavier load of online courses: 28% enrolled in two online classes, 12% in three and 7% in 4 or more classes (see Table 6). It is important to note that 38% of all online students did not register for any on-campus course and that 10% registered for only one campus course. Thus, it appears that for almost 50% of students enrolled in online courses, this method of instructional delivery supersedes the traditional on-campus format. While it is too early to draw any conclusions, one hypothesis that deserves further testing in the future is the extent to which a new

strand of students is emerging who will enroll only or mainly in online courses. The cultivation of such a group and its continued enrollment at SBCC might be dependent on the availability of online classes in subjects that meet its interests and needs. After three semesters of online course delivery, there is not enough evidence to confirm such a hypothesis. One way of testing it is to see how many of the students who were enrolled in at least one online course in Fall 1999 took an online course in the past. Only 10% of the Fall 1999 online students were enrolled in an online course at SBCC in at least one of the prior two semesters – Spring 1999 and Summer 1999. Thus, for most online students in Fall 1999 this was a new experience and for 38% of them was the only experience (see Tables 7 and 8). Generally, the percentage of students who enrolled in an online course in one semester and repeated the experience in the next semester varies. 18% of the students who took an online course in Spring 1999 registered for online courses again in Fall 1999 and 11% of those who took at least one online course in Fall 1999 registered again in Spring 2000 (see Table 9). This may be due in part to the course offerings and to the experiences students have while in the online environment, which are examined later.

Table 3. Enrollment as of Census Day of Courses

| | Unduplicated headcount | Duplicated headcount |
|--------|------------------------|----------------------|
| SBCC* | 13,729 | 46,018 |
| Online | 957 | 1,143 |
| Peer | 3,672 | 4,325 |

* The 13,729 includes all students (unduplicated headcount) who enrolled in at least one course throughout Fall 1999 and who were still enrolled on the census day of the course (which does not necessarily correspond with the census day of the semester - September 13, 1999). That is, students who enrolled for a short course that started after September 13, 1999 are also included. This is why this number is higher than the 12,949 - unduplicated student count as of census day of the semester.

Table 4. Online Enrollment as of Census Day of Courses

| | Unduplicated headcount | Duplicated headcount |
|----------------|------------------------|----------------------|
| Hybrid | 171 | 182 |
| Totally Online | 736 | 863 |
| Partial | 98 | 98 |
| All* | 957 | 1,143 |

* The total of unduplicated students for the three types of courses is 1,005 compared to the 957 for all online because 48 students were enrolled in more than one online course of different types. Thus they are counted in the unduplicated headcount of each type of course in which they were enrolled.

Table 5. Online and Peer Course Enrollment as of Census Day of Courses

| | Online | Peer | Difference Online-Peer |
|-----------------------|--------|------|------------------------|
| Hybrid | | | |
| ACCT 230 | 11 | 259* | -248 |
| ACCT 240 | 9 | 74 | -65 |
| COMAP 101 | 47 | 243 | -196 |
| COMAP 113A | 30 | 24 | 6 |
| COMM 161 | 22 | 48 | -26 |
| ENG 111 | 34 | 666 | -632 |
| HE 101 | 29 | 215 | -186 |
| Totally Online | | | |
| BIOL 120 | 44 | 22 | 22 |
| BIOL 120L | 43 | 22 | 21 |
| BIOL 151S | 27 | NA | NA |
| BIOL 98 | 45 | NA | NA |
| CNEE 131 | 55 | NA | NA |
| COMAP 103 | 63 | 69 | -6 |
| EARTH 101 | 44 | 477 | -433 |
| ESL 107 | 11 | NA | NA |
| HIST 103 | 37 | 175 | -138 |
| HIT 100 | 36 | NA | NA |
| HIT 150 | 21 | NA | NA |
| HIT 200 | 23 | NA | NA |
| HIT 240 | 23 | NA | NA |
| PE 163A | 32 | 33 | -1 |
| PERDV191A | 288 | 65 | 223 |
| PHIL 101 | 32 | 161 | -129 |
| SPAN 115 | 39 | NA | NA |
| Partial | | | |
| CHST 101 | 29 | 46 | -17 |
| ENG 110 | 33 | 1306 | -1273 |
| ENG 70 | 21 | 393 | -372 |
| FR 102 | 15 | 27 | -12 |
| Total | 1143 | 4325 | -3182 |

* Combines duplicated headcount of ACCT 230 and ACCT 230CP

Table 6. Number of online courses for which students registered in Fall 1999

| # Online Courses | # Students | % of total unduplicated students* |
|------------------|------------|-----------------------------------|
| 1 | 947 | 81 |
| 2 | 328 | 28 |
| 3 | 141 | 12 |
| 4 | 48 | 4 |
| 5 | 10 | 1 |
| 6 | 12 | 1 |
| 7 | 14 | 1 |

* The unduplicated total number of students who registered for at least one online course in Fall 1999 was 1,176.

Table 7. Registration for on-campus courses of all Fall 1999 online students

| # On-campus courses | # online students | % of all online students |
|---------------------|-------------------|--------------------------|
| 0 | 444 | 38 |
| 1 | 113 | 10 |
| 2 | 95 | 8 |
| 3 | 102 | 9 |
| 4 or more | 422 | 36 |

Table 8. Students enrolled in Fall 1999 online courses who enrolled in at least one online course in Spring 1999 and/or Summer 1999

| | Enrolled in at least an online course in Spring 1999 | Enrolled in at least an online course in Summer 1999 |
|----------------------------------|--|--|
| N | 120 | 27 |
| % of all Fall 99 online students | 10 | 2 |

Table 9. Students enrolled in Spring 1999 and Fall 1999 online courses, respectively, who enrolled in at least one online course in Fall 1999 and Spring 2000, respectively

| | Spring 1999 online students who enrolled in an online course in Fall 1999 | Fall 1999 online students who enrolled in an online course in Spring 2000 |
|--|---|---|
| N | 120 | 136 |
| % of total unduplicated online students for the semester | 18 | 11 |

There were 655 unduplicated students who enrolled in at least one online class in Spring 1999, 1,176 unduplicated students in Fall 99 and 1,181 in Spring 2000 (as of February 21, 2000).

Student Demographic Profile

The demographic characteristics presented in this section reflect the makeup of students enrolled as of the census day of courses. Gender wise, female online students surpass the percent of female students college-wide and in peer on-campus courses. 56% of the Fall 1999 online students were female compared to 50% college wide and 51% in peer courses (see Figure 1). The gender difference between online and peer courses is not statistically significant (see Figure 3).

The breakdown by type of online course attended reveals interesting differences. The hybrid courses have the highest percentage of female students (58%), followed by totally online courses (55%) while the partial courses drop to 43% female students.

Gender

Figure 1

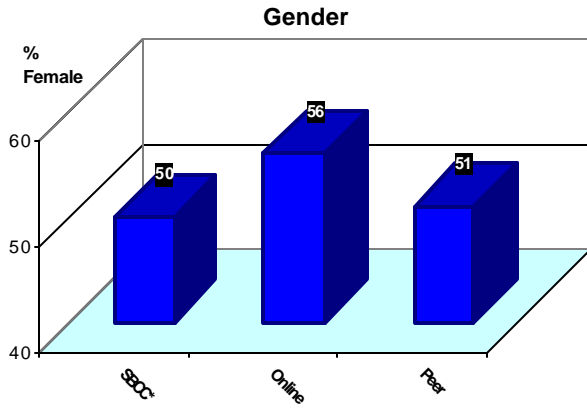


Figure 2

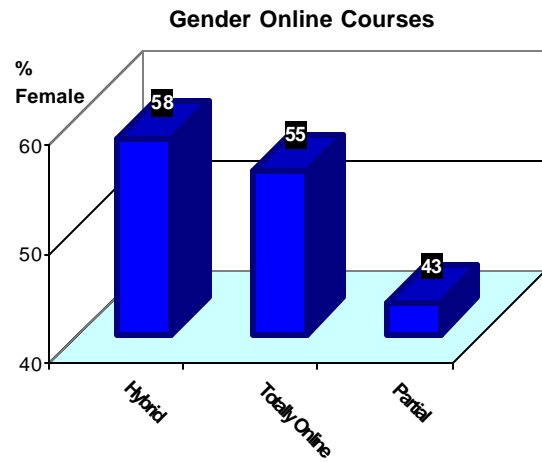


Figure 3. Chi-Square Test of Association between Gender and Online vs. Peer Courses

gender * METH_OF_INSTR Crosstabulation

| Count | | METH_OF_INSTR | | Total |
|--------|---|---------------|-----|-------|
| | | 0 | 1 | |
| gender | 0 | 1891 | 521 | 2412 |
| | 1 | 1781 | 436 | 2217 |
| Total | | 3672 | 957 | 4629 |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|------------------------------------|--------------------|----|-----------------------|----------------------|----------------------|
| Pearson Chi-Square | 2.635 ^b | 1 | .105 | | |
| Continuity Correction ^a | 2.518 | 1 | .113 | | |
| Likelihood Ratio | 2.638 | 1 | .104 | | |
| Fisher's Exact Test | | | | .110 | .056 |
| Linear-by-Linear Association | 2.634 | 1 | .105 | | |
| N of Valid Cases | 4629 | | | | |

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 458.34.

Age

Overall, online students are comparable to SBCC students in terms of average and median age. The average age for both groups is 26, and the median age differs by only one year, 21 and 22, respectively (see Figure 4). Students enrolled in on-campus peer courses are younger, with an average age of 23. However, the median age is the same for online and peer courses. Although the difference in average age is only three years, it is statistically significant (see Figure 6). While the averages and medians are very similar, the age variation for online students is higher than for peer courses, that is the students in peer courses tend to be more homogeneous in age than the online students.

Again the breakdown by type of online courses reveals interesting differences. Students in hybrid courses tend to be older than those in totally online and partial courses. Combined with the gender information, the hybrid courses tend to be dominated by older, female students; the totally online courses still have more female students but younger; and the partial courses have more male students of comparable age to their totally online counterparts.

Figure 4

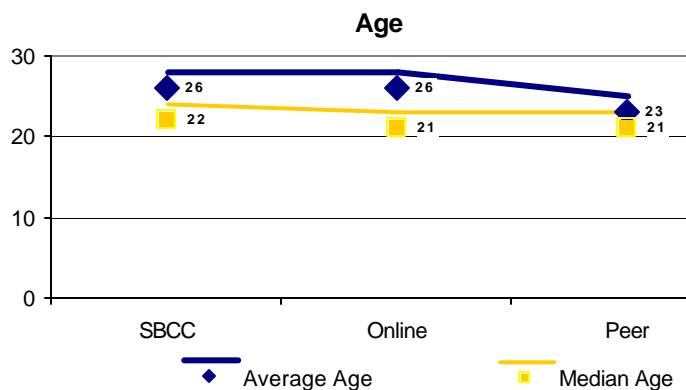


Figure 5

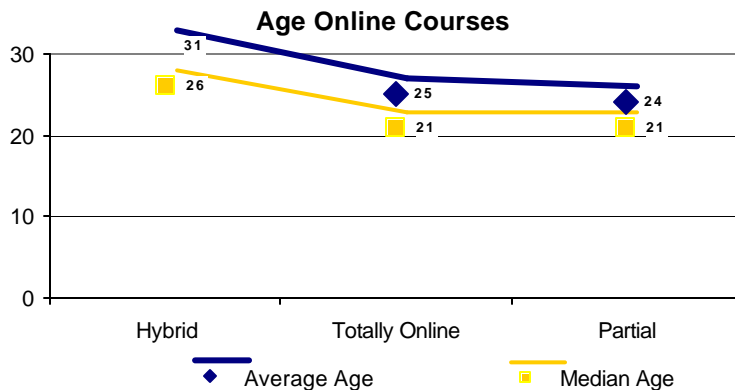


Figure 6. T Test of Significance of Average Age Online vs Peer Courses

Group Statistics

| | METH_OF_INSTR | N | Mean | Std. Deviation | Std. Error Mean |
|-----|---------------|------|-------|----------------|-----------------|
| AGE | 1 | 942 | 25.70 | 11.75 | .38 |
| | 0 | 3660 | 22.71 | 7.19 | .12 |

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|-----|-----------------------------|---|------|------------------------------|----------|-----------------|-----------------|-----------------------|---|-------|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| AGE | Equal variances assumed | 482.742 | .000 | 9.814 | 4600 | .000 | 2.99 | .30 | 2.39 | 3.58 |
| | Equal variances not assumed | | | 7.452 | 1128.659 | .000 | 2.99 | .40 | 2.20 | 3.77 |

Ethnicity

In terms of distribution by ethnicity, online courses are very similar to SBCC and peer courses. The highest percentage is of white students (over 60%), followed by Hispanic students (around 25%) and other groups each with low percentages (see Figure 7). The breakdown by type of online courses reflects the course offerings. The partial courses (Chicano studies, English as a second language) tend to have larger percentages of Hispanic students than other courses, and this is no exception. However, in all three groups of courses, white students are the majority, hybrid courses having the highest percentage of white students (71%) compared to 64% in totally online courses and 52% in partial courses (see Figure 8).

Figure 7

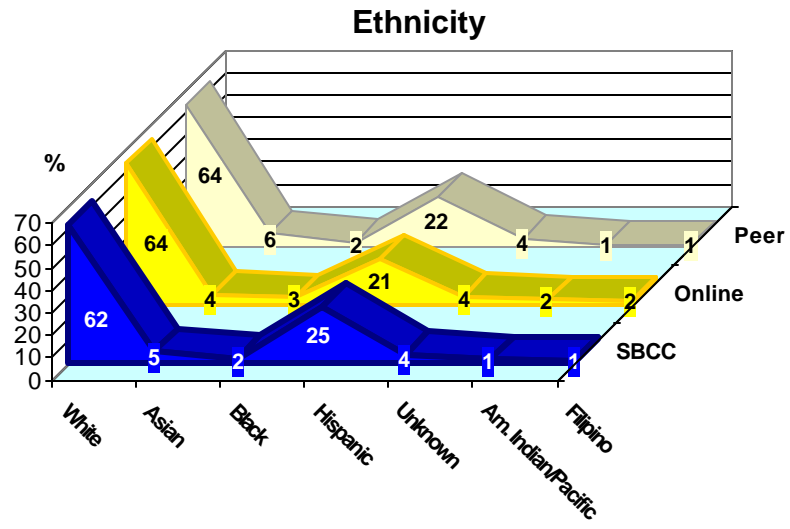
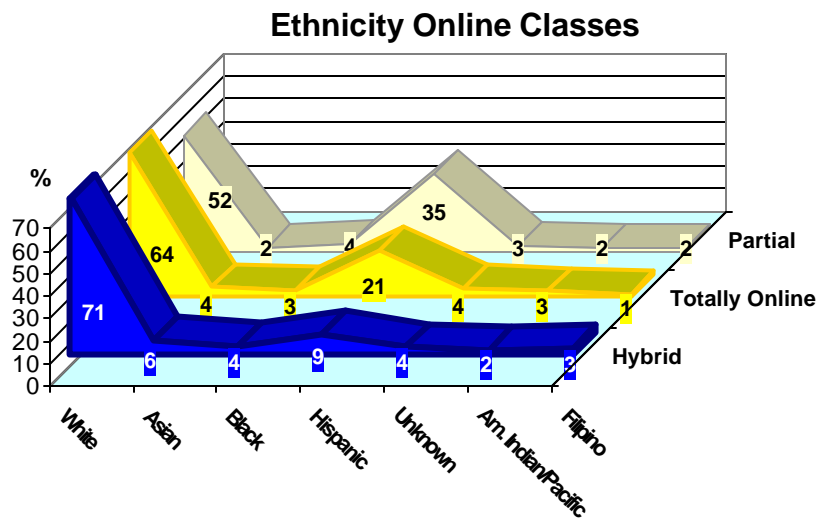


Figure 8



**Figure 9. Chi-Square Test of Association between
Ethnicity and Online vs. Peer Courses**

Ethnicity group * METH_OF_INSTR Crosstabulation

| Count | | METH_OF_INSTR | | Total |
|--------------------|---|---------------|-----|-------|
| | | 0 | 1 | |
| Ethnicity group | 1 | 2334 | 611 | 2945 |
| | 2 | 216 | 43 | 259 |
| | 3 | 77 | 30 | 107 |
| | 4 | 820 | 199 | 1019 |
| | 5 | 141 | 36 | 177 |
| | 6 | 49 | 21 | 70 |
| | 7 | 35 | 17 | 52 |
| Total | | 3672 | 957 | 4629 |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|---------------------------------|---------------------|----|--------------------------|
| Pearson Chi-Square | 15.284 ^a | 6 | .018 |
| Likelihood Ratio | 14.347 | 6 | .026 |
| Linear-by-Linear Association | .790 | 1 | .374 |
| N of Valid Cases | 4629 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.75.

Student Success

The measures of student success used in this section are course attrition, grade distribution and cumulative GPA. The course attrition (students who drop the course) appears to reveal some potential problems for some of the online courses. While overall, for all online courses the course attrition by the census day of the courses is similar for online courses, SBCC and peer courses with 24% of all students who registered for the classes dropping them, the attrition between the census day and the end of the courses is significantly higher for online courses compared to SBCC and peer courses. 24% of all students who enrolled in online courses dropped between census and the end of their courses. This is 8% higher than the SBCC attrition rate by the end of the course and 9% higher than the peer courses.

The breakdown by type of online courses, indicates that actually the hybrid courses have the highest attrition rates, with 47% of the students in hybrid courses dropping by the census day of the courses. Totally online courses, on the other hand, are doing well, better by census day than both SBCC overall and peer courses. Partial courses are in between. The attrition between census day and the end of courses is similar for the three types of online courses, with 23% attrition for hybrid courses and 24% for totally online and partial courses (see Figures 10 and 11).

The corroborated information from the student demographic profile might provide an explanation for the high attrition rates in hybrid courses. Hybrid courses tend to be dominated by

older female students who are likely to have more familial responsibilities. It might also be the format of these courses, which tries to combine some on campus attendance with the online coursework that might cause problems. The number of on-campus meetings is not sufficient for providing enough interaction between instructors and students but might be enough to cause students who expected an online experience without on campus attendance to withdraw.

Course Attrition

Figure 10

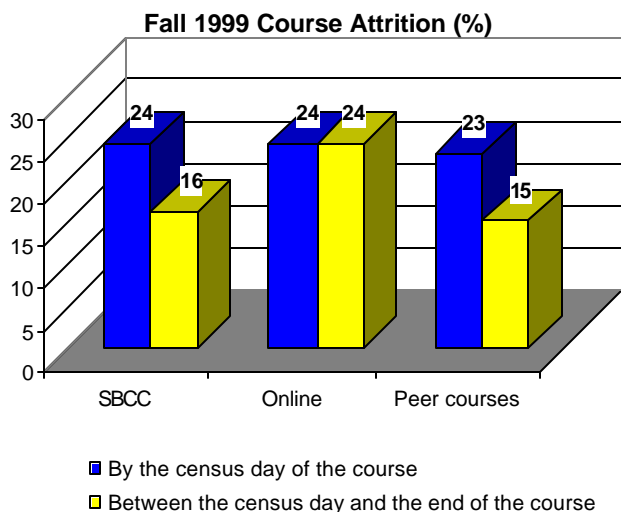
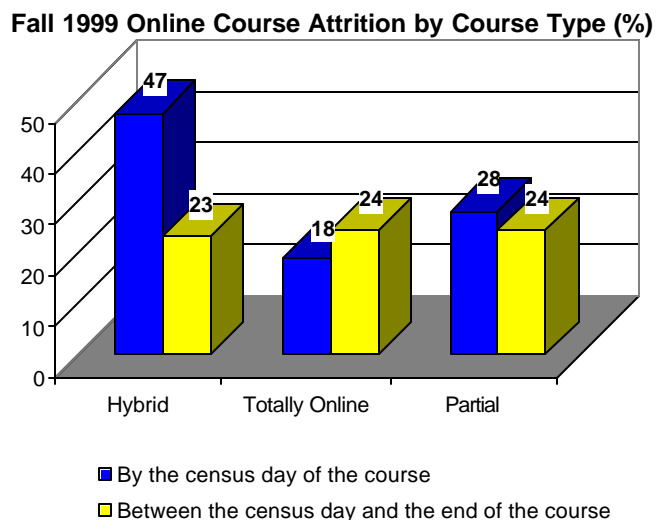


Figure 11



A distribution of number of online courses dropped indicates that 37% of all students dropped one online course by the end of the course, 10% dropped two courses and 7% dropped three or more courses (see Table 10).

Table 10. Number of online courses dropped by the end of the course

| # Courses dropped | # Unduplicated Students | % of total unduplicated students |
|-------------------|-------------------------|----------------------------------|
| 1 | 430 | 37 |
| 2 | 122 | 10 |
| 3 | 57 | 5 |
| 4 | 12 | 1 |
| 6 | 12 | 1 |

Comparing the attrition for each course for online and on-campus peer courses, it is apparent that except for a few courses, online courses have higher attrition rates than their on-campus peers, both by the census day of the course and between the census day and the end of the course (see Table 11). The latter is particularly important because students who drop after the census day of the course receive a grade of W for the course and the course remains in their permanent SBCC record. Several online courses have very high attrition rates after the census day: HIST 103 (59%), SPAN 115 (41%), FR 102 (40%), COMAP 101 (36%), BIOL 120 (36%), PE 163A (34%), ENG 110 (33%) and EARTH 101 (30%). The online courses with the lowest attrition rates after census day are: ACCT 240 (0%), ENG 70 (5%), COMAP 113A (6%), and COMAP 103 (6%).

Table 11. Course Attrition (%)

| | By Census Day of the Course | | | Between Census Day of the Course and the End of the Course | | |
|-----------------------|-----------------------------|------|------------------------|--|------|------------------------|
| | Online | Peer | Difference Online-Peer | Online | Peer | Difference Online-Peer |
| Hybrid | | | | | | |
| ACCT 230 | 67 | 31 | 35 | 27 | 15 | 8 |
| ACCT 240 | 64 | 19 | 45 | 0 | 12 | -12 |
| COMAP 101 | 18 | 22 | -5 | 36 | 18 | 18 |
| COMAP 113A | 6 | 14 | -8 | 6 | 31 | -25 |
| COMM 161 | 49 | 33 | 16 | 18 | 15 | 3 |
| ENG 111 | 35 | 27 | 8 | 12 | 15 | -3 |
| HE 101 | 42 | 17 | 25 | 21 | 13 | 8 |
| Totally Online | | | | | | |
| BIOL 120 | 20 | 15 | 5 | 36 | 9 | 27 |
| BIOL 120L | 23 | 15 | 8 | 35 | 9 | 26 |
| BIOL 151L | 100 | NA | NA | NA | NA | NA |
| BIOL 151S | 21 | NA | NA | 19 | NA | NA |
| BIOL 98 | 13 | NA | NA | 18 | NA | NA |
| CNEE 131 | 19 | NA | NA | 16 | NA | NA |
| COMAP 103 | 34 | 24 | 10 | 6 | 29 | -23 |
| EARTH 101 | 33 | 17 | 16 | 30 | 11 | 19 |
| ESL 107 | 27 | NA | NA | 18 | NA | NA |
| HIST 103 | 44 | 26 | 18 | 59 | 16 | 43 |
| HIT 100 | 27 | NA | NA | 17 | NA | NA |
| HIT 150 | 19 | NA | NA | 19 | NA | NA |
| HIT 200 | 0 | NA | NA | 17 | NA | NA |
| HIT 240 | 8 | NA | NA | 22 | NA | NA |
| PE 163A | 22 | 31 | -9 | 34 | 24 | 10 |
| PERDV191A | 1 | 8 | -7 | 20 | 38 | -18 |
| PHIL 101 | 27 | 21 | 6 | 28 | 10 | 18 |
| SPAN 115 | 38 | NA | NA | 41 | NA | NA |
| Partial | | | | | | |
| CHST 101 | 22 | 25 | -3 | 21 | 11 | 10 |
| ENG 110 | 28 | 19 | 9 | 33 | 15 | 18 |
| ENG 70 | 36 | 32 | 5 | 5 | 13 | -8 |
| FR 102 | 25 | 34 | -9 | 40 | 26 | 14 |
| Total | 24 | 23 | 1 | 24 | 15 | 9 |

Tests of Significance/Correlations/Regressions

Association between Type of Online Course and Attrition

The Chi-Square tests indicate that there is a significant association between the type of online courses and course attrition by the census day of the course ($p < 0.00005$). As expected, there is no statistical significance between type of online course and the attrition after the census day of the course. (Figure 12). This is because the attrition rates after census are very similar for the three types of online courses.

Figure 12. Chi-Square Test Course Attrition and Type of Online Course

Drop before census day of the course

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|--------------------|---------------------|----|-----------------------|
| Pearson Chi-Square | 43.214 ^a | 2 | .000 |
| Likelihood Ratio | 40.579 | 2 | .000 |
| N of Valid Cases | 1500 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 32.37.

Drop after census day of the course

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|--------------------|--------------------|----|-----------------------|
| Pearson Chi-Square | 1.889 ^a | 2 | .389 |
| Likelihood Ratio | 1.940 | 2 | .379 |
| N of Valid Cases | 1500 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.02.

Correlations

A number of variables were developed to try to identify possible significant correlations and to try to predict the probability that a student will drop from an online course. These variables include: number of online courses registered for in Fall 1999, number of traditional courses registered for in Fall 1999, number of online courses dropped in Fall 1999, being enrolled in a totally online course, age, being a continuing SBCC student, gender, being white, cumulative GPA, total units completed, difference between units attempted and units completed (this measure is somewhat problematic because the units attempted do not include courses graded Credit/Non credit, thus in some cases the number of units attempted is lower than the number of units completed, which include the CR/NC units), having a declared major, being a Santa Barbara County resident, working at least 20 hours per week, and having prior online course experience at SBCC.

Appendix 2 presents the bivariate correlation table. One immediate observation is that there are not many statistically significant correlations, other than those one would expect (such as positive correlation between age and working at least 20 hours per week, between GPA and number of units completed, between GPA and number of traditional courses registered for). However, some of the significant ones are important for this study. For example, there is a high, negative correlation between being a continuing SBCC student and being a Santa Barbara County resident, which indicates that indeed students who live farther enroll in online courses more than others. Another important, although expected, significant correlation is between age and number of units completed. Overall, however, these correlations do not provide any significant insights.

**Predicting Student Withdrawal from Online Courses
Results of a Logistic Regression**

A logistic regression was conducted to determine the probability that a student will withdraw from an online course. The outcome – withdrawal – has two values (1=withdrawn, 0=not withdrawn). The variables mentioned above were used as independent variables. Appendix 3 presents the results of the regression. This regression explained only 18% of the probability that a student will withdraw (Nagelkerke R Square=.176). This means that more than 80% of the probability that a student will withdraw from an online course is explained by other variables.

However, it should be noted that several variables were significant in predicting the probability of withdrawal, after controlling for the others. The number of online courses a student registers for in one semester is a significant predictor, that is the addition of one online course increases the odds that a student will withdraw. The same is true for number of traditional courses one enrolls in. The GPA is also a significant variable. The others were not significant. In conclusion, the inferential statistics were not particularly helpful in predicting one's decision to withdraw from an online course. This finding is not particularly surprising as the literature related to attrition in general indicates that the decision to drop from a course is also related to factors that are not easily quantifiable (such as satisfaction with overall social and academic contexts, personal factors such as family obligations, etc). The only apparent conclusion is a common sense one which relates to the number of courses one registers for, the higher the number of courses the more probable is that the student will drop one.

Grade Distributions

The grade distributions indicate that whereas peer courses mirror closely the SBCC averages for successful and passing grades and Ws, online courses trail them far behind (see Figure 13). Successful grades are A, B, C, and CR. The passing grades add Ds to the successful grades. W indicates withdrawal from the course after the census day of the course. As some of the responses to the survey suggest, online students were not fully aware of this rule, thus many did not drop on time to have the course removed from their record and received a W. Again, hybrid classes are quite different from the other two. Students in hybrid classes have higher success and passing rates than students enrolled in totally online and partial classes. The rate of Ws is similar between the three types of classes (see Figure 14).

Figure 13

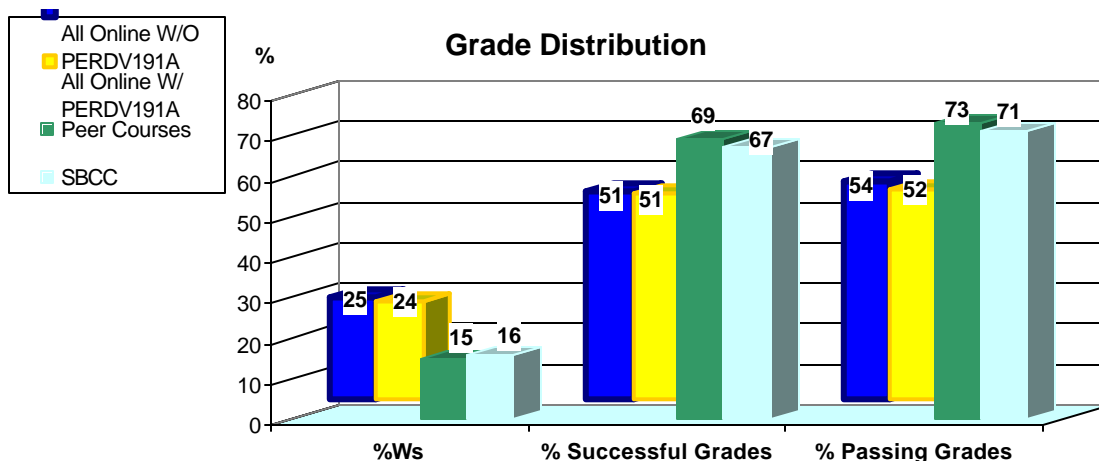
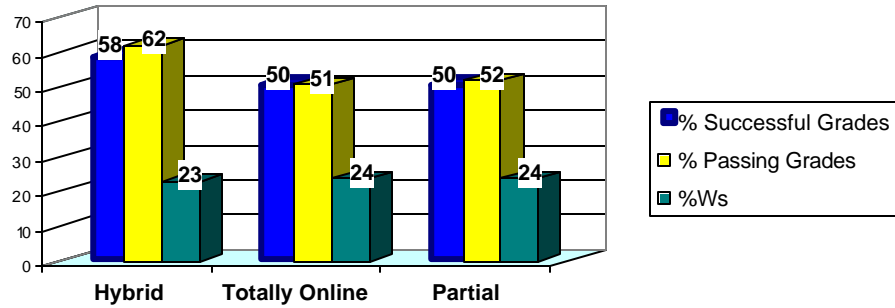


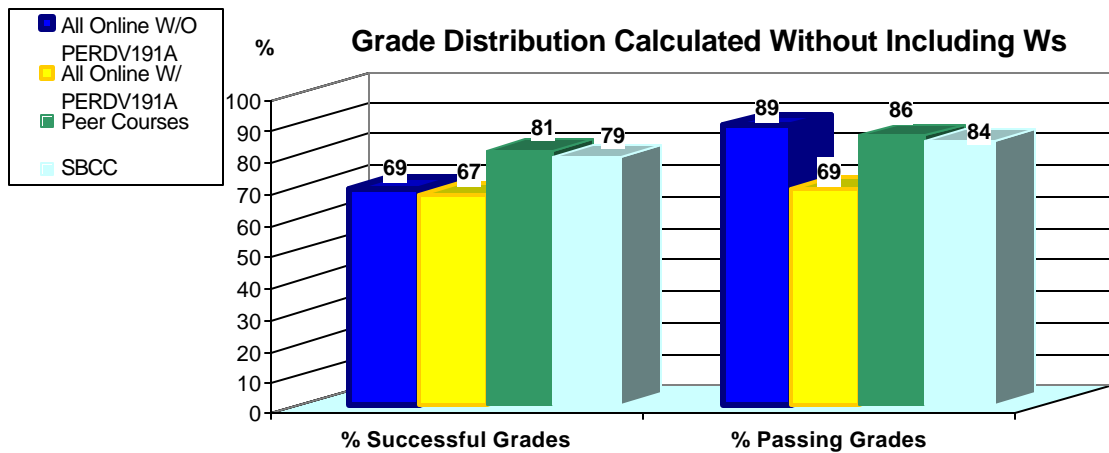
Figure 14

Grade Distribution for Online Courses by Course Type



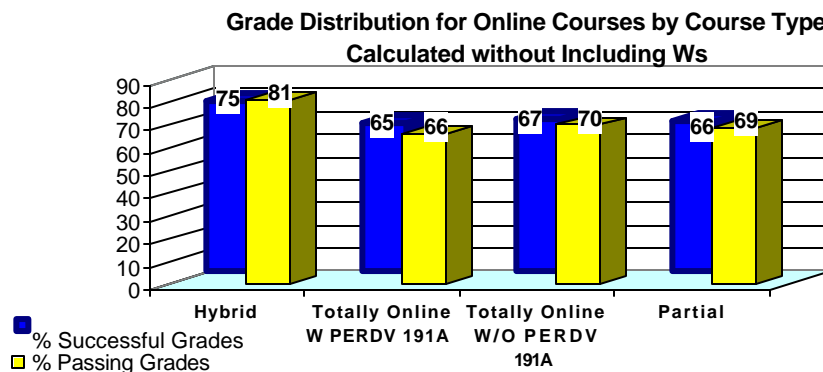
When the grade distribution is calculated without including Ws, the situation changes significantly. If PERDV191A is excluded from the grade distribution for online classes (first bar in Figure 15), online classes still lag behind the SBCC and peer course percentages of successful grades. Actually, in this group peer courses have the highest percentage – 81% of successful grades. But in the passing grade group, online classes without PERDV191A have the highest percentage. This is because PERDV 191A is a credit/non credit course that had high enrollment and a high number of non-passing grades (NC) awarded. If those non-passing grades are excluded, then the distribution for all online classes improves. If PERDV 191A is included, online courses are still well behind the other two types of courses for both successful and passing grades. The implication of this distribution is that for online classes, other than PERDV 191A, if the issue of high withdrawals after the census date of the course is resolved, the percentage of passing grades is actually higher than for SBCC and peer courses. Successful grades, however, continue to be problematic for online classes even if the withdrawal situation is resolved.

Figure 15



The findings for the grade distribution of online courses in general, when Ws are not included in the calculation, become even more appropriate when the distribution is broken by type of online courses. If the withdrawal situation is resolved for hybrid courses, their percentages of successful and passing grades, while still below the SBCC and peer courses averages, would become fairly comparable. Totally online and partial courses, on the other hand, would still be far behind SBCC and peer-course averages. For totally online classes, if PERDV 191A is excluded, the percentage of passing grades reaches 70. The course attrition and grade distribution information indicates that online classes, in general, and hybrid classes, in particular, have high attrition rates when compared to SBCC and peer courses. Totally online and peer courses, on the other hand, have lower attrition rates. Then, obviously, if Ws are included in the calculation of the grade distribution, online courses are well behind SBCC and peer-courses. Even then, however, hybrid courses have a better grade distribution than the other two types of online classes. When Ws are excluded from the calculation (that is the grade distribution includes only those individuals who persisted until the end of the course) and PERDV 191A (this is a totally online class) is also eliminated, online courses take the lead in terms of passing grades, but are still behind in terms of successful grades.

Figure 16



Most online courses have lower success rates than their on-campus peers. The only exceptions are ACCT 240, HE 101, and PERDV191A (see Table 12).

Table 12. Percent Successful Grades by Course (Online vs. Peer)

| | Online | Peer | Difference Online-Peer |
|-----------------------|--------|------|------------------------|
| Hybrid | | | |
| ACCT 230 | 55 | 66 | -12 |
| ACCT 240 | 100 | 81 | 19 |
| COMAP 101 | 47 | 62 | -15 |
| COMAP 103 | 40 | 51 | -11 |
| COMAP 113A | 40 | 69 | -29 |
| COMM 161 | 55 | 79 | -25 |
| ENG 111 | 68 | 74 | -6 |
| HE 101 | 69 | 61 | 8 |
| Totally Online | | | |
| BIOL 120 | 57 | 82 | -25 |
| BIOL 151S | 44 | NA | NA |
| BIOL 98 | 22 | NA | NA |
| CNEE 131 | 65 | NA | NA |
| EARTH 101 | 55 | 74 | -19 |
| ESL 107 | 36 | NA | NA |
| HIST 103 | 19 | 65 | -46 |
| HIT 100 | 64 | NA | NA |
| HIT 150 | 57 | NA | NA |
| HIT 200 | 83 | NA | NA |
| HIT 240 | 78 | NA | NA |
| PE 163A | 50 | 67 | -17 |
| PERDV191A | 49 | 34 | 15 |
| PHIL 101 | 50 | 71 | -21 |
| SPAN 115 | 54 | NA | NA |
| Partial | | | |
| CHST 101 | 59 | 80 | -22 |
| ENG 110 | 42 | 69 | -26 |
| ENG 70 | 48 | 73 | -26 |
| FR 102 | 53 | 67 | -13 |
| Total | 51 | 69 | -18 |

Figure 17. Chi-Square Test of Association between Method of Instruction (Online vs. Peers) and Grades

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) |
|--------------------|----------------------|----|-----------------------|
| Pearson Chi-Square | 486.640 ^a | 10 | .000 |
| Likelihood Ratio | 486.269 | 10 | .000 |
| N of Valid Cases | 5468 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.73.

Generally, as expected students who work less than 20 hours per week have slightly higher success rates and cumulative GPA (see Tables 13 and 14). However, except for SBCC, the differences for online and peer courses, respectively are not statistically significant. Interestingly, however, is that online students have higher cumulative GPAs than the college average or the peer course students. This is somewhat in contradiction with the lower success rates that they exhibit and deserves further investigation. Students in hybrid courses have the highest GPA of the three groups regardless of the number of hours worked per week (see Table 15).

**Table 13. Differences between Students by Number of Hours Worked
% Successful Grades**

| | Less than 20 hours per week | 20 or more hours per week | Significance test | p value |
|--------|-----------------------------|---------------------------|--------------------|-----------------|
| SBCC | 64 | 62 | $\chi^2(1)=21.107$ | p<.001 |
| Online | 53 | 50 | $\chi^2(1)=2.512$ | Not significant |
| Peer | 68 | 66 | $\chi^2(1)=1.974$ | Not significant |

**Table 14. Differences between Students by Number of Hours Worked
Average Cumulative GPA**

| | Less than 20 hours per week | 20 or more hours per week | Significance test | p value |
|--------|-----------------------------|---------------------------|-------------------|-----------------|
| SBCC | 2.72 | 2.70 | t=1.280 | Not significant |
| Online | 2.85 | 2.84 | t=.162 | Not significant |
| Peer | 2.65 | 2.59 | t=-2.241 | p<.05 |

Table 15. Average Cumulative GPA by Number of Hours Worked and Type of Online Course

| | Less than 20 hours per week | 20 or more hours per week |
|----------------|-----------------------------|---------------------------|
| Hybrid | 3.04 | 2.88 |
| Totally Online | 2.78 | 2.87 |
| Partial | 2.48 | 2.68 |

Overall, online students have both attempted and completed, on average, slightly more units than the SBCC and peer course averages (see Table 16). Students in hybrid courses have the highest average of both attempted and completed units, followed by those in partial courses and then by students in totally online courses (see Table 17). Unfortunately, because the units attempted do not include those from CR/NC courses, they do not provide an accurate picture of a student's course withdrawal pattern. At most, they indicate that many students do enroll in a number of CR/NC classes and that they dropped some of them at some point while at SBCC.

Table 16. Average Total Units Attempted and Completed

| | Average units attempted* | Average units completed | Average difference between units attempted and completed |
|--------|--------------------------|-------------------------|--|
| SBCC | 27 | 28 | 1 |
| Online | 30 | 30 | 0 |
| Peer | 26 | 27 | -1 |

* The units attempted do not include those from CR/NC courses but the units completed do. Thus, the difference between units completed and those attempted can be negative.

Table 17. Average Total Units Attempted and Completed

| | Average units attempted | Average units completed | Average difference |
|----------------|-------------------------|-------------------------|--------------------|
| Hybrid | 40 | 40 | 0 |
| Totally online | 21 | 21 | 0 |
| Partial | 26 | 36 | 0 |

Student Opinions

The responses to the 19 questions of the survey are presented below. Appendix 4 lists the comments for each of the questions and the general comments.

Responses

Most respondents learned about the online class(es) they registered for from the class schedule. For those checking the “Other” category, the Santa Barbara News Press and Internet search were the most prevalent responses (see Table 18).

Table 18. Q1 – Overall Responses

| Q1. I learned about this class | | |
|---|-----|-------|
| | N | % |
| From the class schedule | 252 | 62.4 |
| From an instructor, counselor, parent or friend | 108 | 26.7 |
| From an advertisement | 11 | 2.7 |
| Other | 33 | 8.2 |
| Total responses | 404 | 100.0 |

Overall, almost half of the respondents felt that the online classes are about equally demanding as compared to a typical on-campus course (see Table 19). However, when responses are categorized by the type of online course attended by respondents, those attending hybrid courses are the least inclined of the four groups to see their courses about equally demanding as on-campus ones. Of all groups, those in partial online courses have the most respondents (39%) indicating that their classes are more demanding than the typical on-campus class. Considering that these courses are the closest in format to on-campus courses, these responses are somewhat unexpected. Those attending only totally online classes, on the other hand, had the highest percent (22%) of respondents indicating that their classes are less demanding than on-campus courses. Generally, the assumption that students expect online classes to be “easy” is not confirmed by their responses to this question (see Table 20).

Table 19. Q2 – Overall Responses

| Q2. How demanding is your online course(s) compared to a typical on-campus course | | |
|--|-----|-------|
| | N | % |
| Less demanding | 66 | 16.8 |
| More demanding | 93 | 23.7 |
| About equally demanding | 192 | 49.0 |
| Not certain | 41 | 10.5 |
| Total responses | 392 | 100.0 |

Table 20. Q2 – Responses by Type of Online Courses Attended

| | Less demanding | More demanding | About equally demanding | Not certain |
|----------------|----------------|----------------|-------------------------|-------------|
| Hybrid | 13.6% | 32.2% | 42.4% | 11.9% |
| Mixed | 14.9% | 21.1% | 58.8% | 5.3% |
| Totally online | 21.5% | 19.9% | 44.8% | 13.8% |
| Partial | 2.8% | 38.9% | 50.0% | 8.3% |

Overall, 35% of the respondents indicated that they like online courses better than on-campus courses and 23% like them about equally (see Table 21). Interestingly, those in partial courses have the highest percentage of respondents indicating that they like the online courses better (44%) as opposed to 34% of the hybrid course students and 37% of the totally online students. Since partial courses have the least use of the online component, it is unclear how these students would feel this way (see Table 22).

Table 21. Q3 – Overall Responses

| Q3. How satisfied are you with your online course(s) as compared to on-campus courses | | |
|--|-----|-------|
| | N | % |
| I like them about equally | 91 | 23.2 |
| I like online courses better | 137 | 34.9 |
| I like on campus better | 51 | 13.0 |
| I like on campus better, but need to take online because of its options | 86 | 21.9 |
| Not certain | 27 | 6.9 |
| Total responses | 392 | 100.0 |

Table 22. Q3 – Responses by Type of Online Courses Attended

| | I like them about equally | I like online courses better | I like on campus better | I like on campus better, but need to take online because of its options | Not certain |
|----------------|---------------------------|------------------------------|-------------------------|---|-------------|
| Hybrid | 16.9% | 33.9% | 10.2% | 32.2% | 6.8% |
| Mixed | 18.4% | 36.8% | 9.6% | 30.7% | 4.4% |
| Totally online | 26.0% | 32.6% | 16.6% | 16.6% | 8.3% |
| Partial | 30.6% | 44.4% | 11.1% | 5.6% | 8.3% |

For most students convenience is an important factor in deciding what course to take. More than half of the respondents indicated had the course not been available online, they would have taken it on campus if it were offered at a convenient time (see Table 23). Table 24 shows that except for those who took more than one course of different types (the mixed category), the majority of students for each of the other three categories would have done the same. As expected the lowest percentage (52%) of such responses comes from totally online students and the highest from partial course students who were on campus most of the time anyway.

Table 23. Q4 – Overall Responses

| Q4. If this course was not available through online, I | | |
|---|-----|-------|
| | N | % |
| would have taken it as a regular on campus course if it were offered at a convenient time | 218 | 55.3 |
| would have taken it at another college | 15 | 3.8 |
| would not have taken it | 110 | 27.9 |
| would not have taken it at all because I did not want an on campus section | 32 | 8.1 |
| Other | 19 | 4.8 |
| Total responses | 394 | 100.0 |

Table 24. Q4 – Responses by Type of Online Courses Attended

| | would have taken it as a regular on campus course if it were offered at a convenient time | would have taken it at another college | would not have taken it | would not have taken it at all because I did not want an on campus section | other |
|----------------|---|--|-------------------------|--|-------|
| Hybrid | 67.8% | 5.1% | 15.3% | 8.5% | 3.4% |
| Mixed | 46.1% | 6.1% | 30.4% | 11.3% | 6.1% |
| Totally online | 51.9% | 2.2% | 34.3% | 7.2% | 4.4% |
| Partial | 81.1% | 2.7% | 10.8% | 2.7% | 2.7% |

A very high percent of respondents indicated that they would take an online course again (73%). Only 7% said that they would not take an online course again (see Table 25). As mentioned in the Enrollments section only 11% of Fall 1999 online students took another online class in Spring 2000. Based on the survey responses, one might have expected this percentage to be higher. The most satisfied and ready to repeat the online experience are students who experienced different types of courses (78%), followed by totally online students (71%) (see Table 26).

Table 25. Q5 – Overall Responses

| Q5. Based on your experience at SBCC, would you take another online course: | | |
|--|-----|-------|
| | N | % |
| Yes | 286 | 72.6 |
| No | 27 | 6.9 |
| Maybe | 81 | 20.6 |
| Total responses | 394 | 100.0 |

Table 26. Q5 – Responses by Type of Online Courses Attended

| | Yes | No | Maybe |
|----------------|-------|------|-------|
| Hybrid | 68.3% | 8.3% | 21.7% |
| Mixed | 78.1% | 8.8% | 13.2% |
| Totally online | 71.4% | 4.9% | 23.6% |
| Partial | 64.9% | 8.1% | 27.0% |

The majority of respondents work more than 20 hours per week and almost half work more than 30 hours (see Table 27). This seems to support the idea that online courses provide a more convenient method of instruction for those who hold full time jobs. However, when looking at the responses broken by type of courses attended, those in totally online courses have less respondents working at least 20 hours per week than respondents in hybrid courses (see Table 28). This provides one more explanation for the high attrition rate of hybrid courses.

Table 27. Q6 – Overall Responses

| Q6. During the semester, are you employed: | | |
|---|-----|-------|
| | N | % |
| 31 or more hours per week | 186 | 46.3 |
| 21 to 30 hours per week | 63 | 15.7 |
| 11 to 20 hours per week | 58 | 14.4 |
| 10 or fewer hours per week | 22 | 5.5 |
| not employed | 73 | 18.2 |
| Total responses | 402 | 100.0 |

Table 28. Q6 – Responses by Type of Online Courses Attended

| | 31 or more hours per week | 21 to 30 hours per week | 11 to 20 hours per week | 10 or fewer hours per week | not employed |
|----------------|---------------------------|-------------------------|-------------------------|----------------------------|--------------|
| Hybrid | 56.7% | 21.7% | 3.3% | 3.3% | 15.0% |
| Mixed | 48.3% | 16.4% | 12.9% | 3.4% | 19.0% |
| Totally online | 44.9% | 12.3% | 17.6% | 5.9% | 19.3% |
| Partial | 27.0% | 21.6% | 21.6% | 13.5% | 16.2% |

More than half of the respondents took the course(s) because it fulfilled a general education or a major requirement. Only 26% took the course because the subject matter looked interesting (see Table 29). For totally online students this latter percent is the highest – 36%. Given the nature of the course offerings, it seems normal that 57% of partial course students indicated that they took the course because it fulfilled a general education requirement (see Table 30).

Table 29. Q7 – Overall Responses

| Q7. Why did you decide to take this course: | | |
|--|-----|-------|
| | N | % |
| to fulfill a gen ed requirement | 149 | 37.2 |
| to fulfill a major requirement | 76 | 19.0 |
| the subject matter looked interesting | 106 | 26.4 |
| the instructor has a good reputation | 9 | 2.2 |
| other | 61 | 15.2 |
| Total responses | 401 | 100.0 |

Table 30. Q7 – Responses by Type of Online Courses Attended

| | to fulfill a gen ed requirement | to fulfill a major requirement | the subject matter looked interesting | the instructor has a good reputation | other |
|----------------|---------------------------------|--------------------------------|---------------------------------------|--------------------------------------|-------|
| Hybrid | 49.2% | 13.6% | 22.0% | 0.0% | 15.3% |
| Mixed | 43.1% | 30.2% | 18.1% | 0.9% | 7.8% |
| Totally online | 25.7% | 15.0% | 36.4% | 2.7% | 20.3% |
| Partial | 56.8% | 10.8% | 10.8% | 8.1% | 13.5% |

The responses regarding the expectations for the grade contradicts the reality. Overwhelmingly, students expected to receive successful grades (mostly As and Bs) (see Table 31). Students across all course types held these high expectations (see Table 32). It is unclear whether these expectations were related to the assumption that online courses would be easy or whether the students based these expectations on the grades received in prior traditional classes.

Table 31. Q8 – Overall Responses

| Q8. What grade do you expect to receive in this course: | | |
|--|-----|-------|
| | N | % |
| A | 209 | 54.1 |
| B | 107 | 27.7 |
| C | 25 | 6.5 |
| D or F | 2 | 0.5 |
| W | 25 | 6.5 |
| CR | 12 | 3.1 |
| NCR | 6 | 1.6 |
| Total responses | 386 | 100.0 |

Table 32. Q8 - Responses by Type of Online Courses Attended

| | A | B | C | D or F | W | CR | NCR |
|----------------|-------|-------|-------|--------|-------|-------|------|
| Hybrid | 52.6% | 26.3% | 5.3% | 1.8% | 10.5% | 0.0% | 1.8% |
| Mixed | 60.5% | 29.8% | 5.3% | 0.0% | 3.5% | 0.9% | 0.0% |
| Totally online | 53.9% | 25.8% | 6.7% | 0.6% | 7.3% | 3.9% | 1.7% |
| Partial | 33.3% | 33.3% | 11.1% | 0.0% | 5.6% | 11.1% | 5.6% |

Most of the respondents live close to the campus, less than 20 miles away (see Table 33). Thus the distance does not seem to have played a role in choosing an online course. The same is true across course types (see Table 34).

Table 33. Q9 – Overall Responses

| Q9. How far do you live from SBCC: | | |
|---|-----|-------|
| | N | % |
| 0-10 miles | 182 | 45.0 |
| 11-20 miles | 123 | 30.4 |
| 21-50 miles | 44 | 10.9 |
| 51-100 miles | 25 | 6.2 |
| more than 100 miles | 30 | 7.4 |
| Total responses | 404 | 100.0 |

Table 34. Q9 - Responses by Type of Online Courses Attended

| | 0-10 miles | 11-20 miles | 21-50 miles | 51-100 miles | More than 100 miles |
|----------------|------------|-------------|-------------|--------------|---------------------|
| Hybrid | 46.7% | 35.0% | 15.0% | 1.7% | 1.7% |
| Mixed | 39.7% | 25.9% | 10.3% | 13.8% | 10.3% |
| Totally online | 45.7% | 32.4% | 10.1% | 3.7% | 8.0% |
| Partial | 57.9% | 28.9% | 7.9% | 2.6% | 2.6% |

Questions 10 through 17 queried students about various aspects related to learning aspects of online delivery as compared to the traditional format and the students' ease of access from a technical perspective. Respondents are split when it comes to understanding ideas and concepts better than in a traditional class. The same split occurs when students are asked if they are able to remember facts easier or visualize the ideas and concepts presented. Thus, it appears that from a learning perspective, students have not decided whether online classes facilitate learning better than the traditional classes. This seems a normal reaction given that 90% of the Fall 1999 online students did not take an online course in a prior semester and it might be difficult to form such opinions based on one experience. However, respondents feel that the online delivery allows them to better balance work, personal responsibilities and coursework, to learn at their own pace and that the feedback received from the instructors is very helpful (see Table 35). They do not think that they spend too much time trying to access the Web or that their computer skills are less than adequate for this type of instruction. The same pattern emerges when respondents are split by type of course attended (see Table 36).

Table 35. Q10-Q17 – Overall Responses

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain | Total Responses |
|--|---|----------------|-------|----------|-------------------|-------------|-----------------|
| Q10. I understand the ideas and concepts better than I would in a more traditional class | N | 36 | 85 | 147 | 20 | 101 | 389 |
| | % | 9.3 | 21.9 | 37.8 | 5.1 | 26.0 | |
| Q11. I am better able to juggle my coursework with my work and/or home responsibilities than would be possible in a more traditional format | N | 196 | 147 | 24 | 5 | 20 | 392 |
| | % | 50.4 | 37.8 | 6.2 | 1.3 | 5.1 | |
| Q12. I am better able to learn at my own pace than I would in a more traditional format | N | 137 | 147 | 72 | 5 | 31 | 392 |
| | % | 35.2 | 37.8 | 18.5 | 1.3 | 8.0 | |
| Q13. I am better able to remember important facts than I would in a more traditional format | N | 42 | 119 | 124 | 16 | 90 | 391 |
| | % | 10.8 | 30.6 | 31.9 | 4.1 | 23.1 | |
| Q14. I am better able to visualize the ideas and concepts presented than I would in a more traditional format | N | 38 | 112 | 136 | 17 | 86 | 389 |
| | % | 9.8 | 28.8 | 35.0 | 4.4 | 22.1 | |
| Q15. I spend too much time trying to access the course site on the World Wide Web | N | 26 | 47 | 195 | 104 | 16 | 388 |
| | % | 6.7 | 12.1 | 50.1 | 26.7 | 4.1 | |
| Q16. I am at disadvantage because I do not possess adequate computer skills | N | 13 | 27 | 149 | 181 | 17 | 387 |
| | % | 3.3 | 6.9 | 38.3 | 46.5 | 4.4 | |
| Q17. The feedback I get from my instructor is very helpful | N | 144 | 168 | 31 | 12 | 31 | 386 |
| | % | 37.0 | 43.2 | 8.0 | 3.1 | 8.0 | |

Table 36. Q10-Q17 – Responses by Type of Online Courses Attended

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain |
|--|----------------|----------------|-------|----------|-------------------|-------------|
| Q10. I understand the ideas and concepts better than I would in a more traditional class | Hybrid | 10.3% | 17.2% | 34.5% | 5.2% | 32.8% |
| | Mixed | 7.2% | 29.7% | 34.2% | 8.1% | 20.7% |
| | Totally online | 8.2% | 20.8% | 39.9% | 3.8% | 27.3% |
| | Partial | 17.1% | 11.4% | 42.9% | 2.9% | 25.7% |
| Q11. I am better able to juggle my coursework with my work and/or home responsibilities than would be possible in a more traditional format | Hybrid | 51.7% | 41.4% | 1.7% | 1.7% | 3.4% |
| | Mixed | 55.4% | 31.3% | 8.0% | 0.0% | 5.4% |
| | Totally online | 48.6% | 38.8% | 6.0% | 1.1% | 5.5% |
| | Partial | 37.8% | 43.2% | 8.1% | 5.4% | 5.4% |
| Q12. I am better able to learn at my own pace than I would in a more traditional format | Hybrid | 36.2% | 43.1% | 17.2% | 0.0% | 3.4% |
| | Mixed | 36.9% | 30.6% | 21.6% | 0.9% | 9.9% |
| | Totally online | 33.2% | 40.2% | 16.3% | 1.6% | 8.7% |
| | Partial | 35.1% | 37.8% | 18.9% | 2.7% | 5.4% |
| Q13. I am better able to remember important facts than I would in a more traditional format | Hybrid | 13.8% | 32.8% | 27.6% | 1.7% | 24.1% |
| | Mixed | 9.0% | 31.5% | 31.5% | 6.3% | 21.6% |
| | Totally online | 9.8% | 27.3% | 34.4% | 3.3% | 25.1% |
| | Partial | 13.5% | 40.5% | 24.3% | 5.4% | 16.2% |
| Q14. I am better able to visualize the ideas and concepts presented than I would in a more traditional format | Hybrid | 6.9% | 32.8% | 34.5% | 3.4% | 22.4% |
| | Mixed | 12.6% | 27.0% | 35.1% | 4.5% | 20.7% |
| | Totally online | 8.2% | 28.4% | 36.6% | 4.4% | 22.4% |
| | Partial | 11.4% | 31.4% | 25.7% | 5.7% | 25.7% |
| Q15. I spend too much time trying to access the course site on the World Wide Web | Hybrid | 3.5% | 21.1% | 47.4% | 24.6% | 3.5% |
| | Mixed | 5.4% | 8.0% | 57.1% | 25.9% | 3.6% |
| | Totally online | 8.8% | 12.1% | 48.9% | 25.8% | 4.4% |
| | Partial | 5.7% | 11.4% | 40.0% | 37.1% | 5.7% |
| Q16. I am at disadvantage because I do not possess adequate computer skills | Hybrid | 1.8% | 7.1% | 41.1% | 46.4% | 3.6% |
| | Mixed | 0.9% | 6.3% | 37.5% | 50.0% | 5.4% |
| | Totally online | 5.5% | 7.2% | 36.5% | 45.9% | 5.0% |
| | Partial | 2.8% | 8.3% | 44.4% | 44.4% | 0.0% |
| Q17. The feedback I get from my instructor is very helpful | Hybrid | 36.2% | 43.1% | 6.9% | 3.4% | 10.3% |
| | Mixed | 37.8% | 42.3% | 10.8% | 2.7% | 6.3% |
| | Totally online | 34.4% | 44.4% | 7.8% | 3.3% | 10.0% |
| | Partial | 51.4% | 42.9% | 2.9% | 2.9% | 0.0% |

More than 45% of the respondents agreed that the interaction online with other students is beneficial to their learning and 20% said that no interaction was required (see Table 37). The highest percentage of agreement is reached by students in partial classes, which is somewhat surprising giving the reduced online interaction that these type of courses imply. The lowest agreement percentage (40.2%) reflects the responses of students in totally online students where online interaction is the only means available (see Table 38).

Table 37. Q18 – Overall Responses

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain | No interaction required for my course | Total Responses |
|---|---|----------------|-------|----------|-------------------|-------------|---------------------------------------|-----------------|
| Q18. The interaction online with other students is beneficial with my learning | N | 54 | 119 | 51 | 24 | 55 | 77 | 380 |
| | % | 14.2 | 31.3 | 13.4 | 6.3 | 14.5 | 20.3 | |

Table 38. Q18 – Responses by Type of Online Courses Attended

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain |
|---|----------------|----------------|-------|----------|-------------------|-------------|
| Q18. The interaction online with other students is beneficial with my learning | Hybrid | 14.3% | 41.1% | 12.5% | 10.7% | 16.1% |
| | Mixed | 17.6% | 26.9% | 20.4% | 8.3% | 13.9% |
| | Totally online | 11.7% | 28.5% | 10.1% | 5.0% | 14.5% |
| | Partial | 14.3% | 45.7% | 11.4% | 0.0% | 11.4% |

The majority of students agreed that the online orientation on SBCC’s web page was helpful (see Table 39). However, 34% of the respondents indicated that they did not participate in the orientation. This is a fairly high percentage and has implications for how well students were informed about the nature of online course delivery and the various expectations and deadlines, including the deadline for withdrawing without a grade in the record. Whereas the high percentage of partial course students who did not participate in the online orientation is expected since most of the work in these courses is on campus, it is somewhat problematic that 39% of the totally online students did not participate either. However, this question referred to the general online orientation. Since each course has its specific online orientation, it is expected that more students participated in the course specific orientations. Nevertheless, these responses indicate that students, especially those in totally online and hybrid courses, should be encouraged to take the online orientation whether through e-mails from instructors or telephone communication.

Table 39. Q18 – Overall Responses

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain | I did not do the online orientation | Total Responses |
|---|---|----------------|-------|----------|-------------------|-------------|-------------------------------------|-----------------|
| Q19. The Online Orientation on SBCC's online webpage was helpful | N | 70 | 138 | 25 | 9 | 17 | 132 | 391 |
| | % | 17.9 | 35.3 | 6.4 | 2.3 | 4.3 | 33.8 | |

Table 40. Q18 - Responses by Type of Online Courses Attended

| | | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Certain | I did not do the online orientation |
|---|----------------|----------------|-------|----------|-------------------|-------------|-------------------------------------|
| Q19. The Online Orientation on SBCC's online webpage was helpful | Hybrid | 12.1% | 48.3% | 3.4% | 1.7% | 3.4% | 31.0% |
| | Mixed | 18.6% | 39.8% | 6.2% | 3.5% | 8.0% | 23.9% |
| | Totally online | 18.7% | 31.3% | 6.6% | 1.1% | 3.3% | 39.0% |
| | Partial | 19.4% | 22.2% | 11.1% | 5.6% | 0.0% | 41.7% |

Of the 440 respondents, 91 (20.7%) withdrew from their online classes. Respondents provided various reasons for withdrawing (see below). One respondent could have provided more than one response in the categories in Table 41 (for comments see Appendix 4). The majority of student who withdrew did so for personal reasons, very few indicated not having the necessary computer skills, computer hardware or internet connection and not being assisted throughout the course.

Table 41. Reasons for Withdrawal

| | N | % of the 91 survey respondents who withdrew |
|--|----|---|
| I did not have the necessary computer skills | 5 | 5.5 |
| I did not have the necessary computer hardware or internet connection | 10 | 11.0 |
| I did not have enough time for my assignments | 10 | 11.0 |
| I found the format of an online class too confusing | 10 | 11.0 |
| I did not receive the assistance I needed in the course | 6 | 6.6 |
| The course content was too difficult | 2 | 2.2 |
| I dropped for personal reasons that have nothing to do with the course | 31 | 34.1 |
| Other | 42 | 46.2 |

Discussion and Implications for College Practice

Information technology has opened new, fundamentally different options for higher education teaching and learning. New technologies and easy access to information are changing traditional concepts of where, when, and how students of all ages learn. The community college is considered a particularly fertile setting in which to explore and develop the capabilities of information technologies for educational purposes. “With its ‘open door’ admissions policy, (...) and focus on teaching and learning rather than research, the community college is poised to balance the interests of the individual with the needs of the larger community” (Van Dusen, 1997, p. 19). Santa Barbara City College exemplifies Van Dusen’s characterization through its efforts to provide students with diversified learning opportunities, including the use of technology in its instructional delivery.

The development and implementation of online course delivery is a challenging task for any institution. SBCC has evolved considerably in only five semesters in both breath and quantity of online course offerings. While many studies related to distance education, in general, focus on the discussion of teaching and learning techniques, this study shifts the focus on the students who engage in this type of instruction.

In terms of student enrollment in online classes, Spring 2000 represents the peak of the five semesters (Fall 1998 being the first). It is still unclear whether a pattern is emerging in online course enrollment in terms of particular groups of students making this form of delivery their main choice. Only 10% of the Fall 1999 online students took an online course in prior semesters and only 11% repeated the online experience in Spring 2000 (down from 18% of Spring 1999 online students who registered again for an online course in Fall 1999). However, 38% of Fall 1999 online students enrolled only in online classes. Most students were cautious in their engagement in online instruction, with 81% of them enrolling in only one online course in Fall 1999. In Fall 1999,

unduplicated online enrollment as of census day of classes represented 7% of the total unduplicated headcount.

In terms of demographic characteristics, overall, online students tend to have a higher percentage of female students (56%) compared to 50% for SBCC and 51% for peer on-campus courses. The female students dominate hybrid courses (58%) and to a lesser extent totally online courses (55%). Partial courses, on the other hand, are male dominated (43% females). Overall, online students are comparable in terms of age to the college average but they are slightly older than students in peer on-campus courses. Of all online students, those in partial courses are the youngest whereas those in hybrid classes are the oldest. This age distribution seems appropriate given the assumption that online courses should appeal to older students who seek flexibility and convenience in their college education. The overall ethnic distribution of online students mirrors closely that of SBCC and peer courses. The nature of course offerings in Fall 1999 skews the ethnic distribution by type of online class. Although the majority of all online classes regardless of type consist of white students, partial courses have a significantly higher percent of Hispanic students while hybrid courses had the highest percentage of white students. The three demographic characteristics combined point to an emerging pattern. Hybrid courses tend to consist of white females of an average age of 31. Totally online classes are still dominated by white females but younger. Partial courses are dominated by younger male students and there are more minority students than in the other type of online classes.

The area of student success raises some questions for the online course delivery. Overall, the course attrition is higher for online courses than for SBCC, in general and peer on campus courses, in particular. Hybrid courses exhibit the highest course attrition rate by the census day of the courses. 47% of hybrid course students dropped their courses by the census day of their courses. This high attrition rate might be explained by a number of factors. One is the demographic make up of these courses. Older females might find themselves unable to finish their courses due to work and familial obligations. The format of the course might pose some problems as well. There is some mandatory on campus activity which is not frequent enough to sustain students throughout the duration of their courses but sufficient to cause students to drop due to lack of time or inconvenience. Totally online courses have a lower attrition rate by census - 18% - compared to 24% for the college and 23% for peer courses. The attrition rates after the census day of the course (that is percent of students who drop their classes between the census day and the end of their courses) indicate that online courses lost more students than SBCC overall or peer courses. 24% of online students dropped after the census day of their classes compared to 16% of all SBCC students and 15% of peer courses. The attrition after census is very similar for the three types of online courses: 23% for hybrid courses and 24% for totally online and partial courses. This indicates that different issues confront the three types of online courses only regarding the attrition by the census day. Once the census day is reached, all online classes, regardless of format, experience the same withdrawal rates.

Trying to predict the probability that a student will withdraw from an online course has not been revealing. The various variables available in the student data system used in a logistic regression explained only 18% of one's decision to drop an online course. Clearly, more research is needed to pinpoint more closely the reasons for student withdrawal, assuming that there are other, academically related reasons besides the personal ones.

The attrition in online classes overall is paralleled by a grade distribution that lags behind that of the college or the peer courses. 52% of online students received a passing grade, compared to 73% of students in peer courses and 71% of SBCC students. This situation however appears to be common for colleges offering online courses. According to a recent article in the Chronicle of Higher Education (Carr, 2000), "at Tyler, one of Texas' largest community colleges, the course-completion rate for the 35 Internet courses offered last fall (Fall 1999) was 58 percent, while for traditional courses the rate was 71 percent. In other states, colleges report similar numbers." Hybrid courses are again an exception, with higher percentages of both successful and passing grades than

the other two types, when Ws are included in the calculation. The gap between online courses, the college and peer courses becomes somewhat smaller when the grade distribution is calculated only for those who persisted through the end of their courses (excluding Ws). Without Ws, generally, online classes are still behind the college and peer course averages but the improvement is visible. Hybrid courses come the closest to the college and peer course average if Ws are not included. This suggests that those who persist in these types of classes, do better grade-wise than their counterparts in totally online and partial courses. This seems a normal consequence given that students in hybrid classes have higher GPAs than students in the other two types and have completed, on average, a larger number of units at SBCC. This indicates that these students have had better academic success and have formed a discipline of study through their prior courses.

These findings raise the question whether the hybrid format should be continued as is or not. If continued in the same format, the probability of high attrition by the census day of courses remains. However, for those that persist throughout the course it is a positive academic experience. Totally online classes do not have attrition problems of magnitude but they certainly need to improve the extent to which their students master the content of the course. Partial courses could make some efforts to reduce the attrition after census and should certainly focus on the student mastering of course content.

In terms of student opinions about their online course experience, generally students are satisfied and indicate that they would repeat the online format. Most feel that the feedback they receive from their instructors is very helpful and that the online interaction with other students is beneficial to their learning. Students are not exactly sure of the difference between online and traditional courses regarding the improved mastery of course content due to the online format. The majority of students do not feel that they had technical difficulties in accessing their online course materials. Although students indicate that they would characterize their online classes at least equally demanding compared to on-campus courses, their grade expectations far exceed the real outcome. This suggests that to some extent students do expect online courses to not be academically challenging. Of all online students who responded to the survey, 34% did not take the online course orientation and 40% of totally online students did not either. However, since each course has its online course orientation, it might be that the students participate in the course specific orientation rather than the general online orientation. This is an issue that deserves further investigation.

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