

Study of Cabrillo College Online/Distance Ed Students

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Purpose:

Cabrillo College has decided to study (1) success and retention of online/distance education students and (2) follow-up online/distance education courses taken by these students who enrolled in online and distance education courses in 01-02 and 02-03 academic years.

Definitions:

Online and distance education is defined as instruction in which the instructor and student are separated by distance and interact through the assistance of communication technology. The specific semesters under study are fall 2001, spring 2002, fall 2002 and spring 2003. In all other parts of this report, the term "online" refers to both online and distance education students (Board report, August 2003).

Success: Those who received grades of A, B, C, and CR.

Retention: Those who did not withdraw.

Follow-up online/distance education courses: those courses that the first-time online students took in their second term.

Populations Studied:

Online and distance education underwent a coding change in Datatel in summer 2002. Commencing summer 2002, MIS definitions changed for XF01 (Session Instruction Method). At Cabrillo, it appears that prior to summer 2002 XF01=60=Online and XF01=80=TV. Beginning summer 2002 XF01=72=Online and XF01=63=TV. To accommodate for the fall 2001 semester, the codes used for online and distance education included all 60, 63, 72, and 80. There were two populations tracked by this study. The first population contained students enrolled in fall 2001, spring 2002, fall 2002 and spring 2003 and took online courses. Their demographic information as well as grade information were analyzed and presented.

The second population was really a subset of the first. From the online students enrolled in fall 2001, spring 2002 and fall 2002 (but not spring 2003 due to data not yet available for fall 2003 for tracking), those who were taking online/distance ed for the first time were identified. Each first-time online student in a given term was tracked to see if s/he took another online course the next term. Students were not tracked beyond their second term.

Research Questions:

- 1) What were the success and retention rates of Cabrillo online students in 01-02, 02-03 academic years?
- 2) What were the patterns of former online students taking additional online courses?

The first question was translated into an analysis of success and retention rates per term with added data of cross tabulations of demographics and other departments.

The second question was translated into a study of the “first-time” online students who took 0, 1 or more online courses in the second semester. First-time online students were not necessarily first-time students at Cabrillo.

Findings for Research Question One:

The enrollment as defined by student headcount (unduplicated counts after removing a duplicate record of enrollment of the same student in the same term) showed that in fall 2001, there were a total of 569 students and by spring 2003. Four semesters later, it has increased by 95% (Table 1). Another table, Table 3 can also be used to get an idea of which department experienced the greatest growth in enrollments.

Table 1. Headcounts of Online Students by Academic Year.

Semester	Unduplicated Counts
FA 01	569
SP 02	708
FA 02	937
SP 03	1107
Total	3,321

The overall success and retention rates of Cabrillo online classes, however, are below that of college average (College average is based on Fact Book 2002). For example, in spring 2002, the college overall course success rate was 67.7%, but online course success rate was only 51.2%. That is a difference of 16.5%. In spring 2002, the college overall course retention rate was 80.0%, but online course retention rate was only 70.1%. That is a difference of 9.9%.

Table 2. Success and Retention of Online Students* by Term.

Termname	SuccCnt	SuccPct	RetnCnt	RetnPct	Total
FA 01	373	53.80%	480	69.30%	693
SP 02	433	51.20%	592	70.10%	845
FA 02	614	50.50%	832	68.40%	1,216
SP 03	770	54.20%	1,015	71.50%	1,420
Total/Avg	2,190	52.50%	2,919	69.90%	4,174

* These are duplicated counts, due to students enrolling in multiple sections per term.

Legend:

- SuccCnt: Success count
- SuccPct: Success rate
- RetnCnt: Retention count
- RetnPct: Retention rate

Table 3 provides an analysis of success and retention rates by departments. (To compare the overall college success and retention rates by departments, please consult Cabrillo College Fact Book 2002). In order to identify departments that had lower or higher than average success rates, the study used the standard deviations of the success rates by department, which is 52.5% plus or minus 14%. Therefore, a “low” rate would be any number lower than 38.5% (shaded) and a “high” rate would be any number higher than 66.5% (bold face), it appears that the following departments had overall low success rates (lower than one standard deviation from

the Mean): CABT (29.8%) and FR (18.5%). The following departments had high success rates (higher than one standard deviation from the Mean): BIO (79.8%) and HS (68.3%).

In order to identify departments that had lower or higher than average retention rates, the study used the standard deviations of the retention rates by department, which is 69.9% plus or minus 10%. Therefore, a "low" rate would be any number lower than 59.9% (shaded) and a "high" rate would be any number higher than 79.9% (bold face), it appears that the following departments had overall low retention rates (lower than one standard deviation from the Mean): ANTHR (58.4%), ENGL (58.6%), JOURN (55.6%), and MATH (55.6%). The following departments had high retention rates (higher than one standard deviation from the Mean): BIO (86.9%), HS (81.7%) and MUS (81.8%).

It should be noted that OCEAN had only 17 students, therefore, it is not appropriate to be listed until there would be more than 35 students enrolled. Other departments not commented were ECE and HIST that both had low enrollments (n < 35).

Table 3. Success and Retention Rates by Departments* by Term.

Termname	FA 01			SP 02			FA 02			SP 03			Total		
Dept	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total
ACCT	53.3%	61.7%	60	50.4%	63.4%	123	59.4%	75.0%	160	49.2%	72.1%	179	53.1%	69.7%	522
ANTHR	45.0%	60.0%	20	54.9%	62.7%	51	42.9%	61.2%	49	44.1%	47.1%	34	47.4%	58.4%	154
BIO	66.7%	76.2%	21	86.4%	90.9%	22	71.4%	81.0%	21	95.0%	100.0%	20	79.8%	86.9%	84
CABT							26.6%	60.9%	64	32.5%	72.7%	77	29.8%	67.4%	141
CG	54.5%	59.1%	22	56.7%	70.0%	30	57.6%	66.7%	33	57.1%	63.3%	49	56.7%	64.9%	134
CJ	57.6%	64.4%	59	56.6%	66.0%	53	45.5%	59.1%	22	60.4%	75.5%	53	56.7%	67.4%	187
DM	33.3%	57.1%	21				62.5%	75.0%	16	50.0%	61.1%	18	47.3%	63.6%	55
ECE				75.9%	86.2%	29							75.9%	86.2%	29
ENGL	42.7%	48.0%	75	37.1%	58.1%	105	48.4%	55.9%	161	59.0%	65.6%	183	49.0%	58.6%	524
FR	34.8%	78.3%	23	25.7%	71.4%	35	0.0%	50.0%	34				18.5%	65.2%	92
GEOG	58.5%	61.0%	41	44.1%	61.8%	34	56.7%	73.3%	60	59.3%	70.4%	27	54.9%	67.3%	162
HIST	45.2%	61.3%	31										45.2%	61.3%	31
HS	73.3%	76.7%	30	66.7%	72.7%	33	62.2%	83.3%	90	75.4%	86.2%	65	68.3%	81.7%	218
JOURN							33.3%	54.2%	24	56.7%	56.7%	30	46.3%	55.6%	54
LIBR	30.0%	65.0%	20	69.2%	84.6%	26	54.8%	67.7%	62	57.6%	80.3%	66	55.2%	74.7%	174
MATH	57.9%	89.5%	19	40.0%	51.4%	35	33.9%	50.0%	62	38.2%	54.6%	152	38.8%	55.6%	268
MUS	69.1%	83.5%	97	45.2%	75.8%	62	59.6%	79.8%	104	70.8%	85.8%	106	62.9%	81.8%	369
OCEAN										41.2%	52.9%	17	41.2%	52.9%	17
PS	55.0%	81.7%	60	58.9%	71.1%	90	66.0%	70.9%	103	61.7%	72.6%	201	61.2%	73.1%	454
SPAN	51.1%	75.5%	94	48.7%	84.6%	117	43.7%	73.5%	151	43.4%	82.5%	143	46.1%	79.0%	505
TOTAL/AVG.	53.8%	69.3%	693	51.2%	70.1%	845	50.5%	68.4%	1,216	54.2%	71.5%	1,420	52.5%	69.9%	4,174

* Please note abbreviations were used for department names. For the original names, please consult Cabrillo College Fact Book 2002.

Legend:

- SuccCnt: Success count
- SuccPct: Success rate
- RetnCnt: Retention count
- RetnPct: Retention rate

Table 4 contains success and retention rates by race by term. There is no immediately data available for analysis of success and retention by race for college overall. Using the standard deviation method, one standard deviation below the average for success would be 42.5% and one standard deviation above the average would be 62.5%. Race groups that were low in success were African American (32.4%), American Indian (32.7%) and Asian (40.7%). No groups were higher than one standard deviation above the average.

Incidentally, the same percentage of 10% is one standard deviation from the average for retention rates, therefore, low would be 59.9% and high 79.9%. Race groups that were low in retention rates were African American (52.1%) and American Indian (53.1%). Only one group had high retention rate: the Unknown group (83.5%).

Table 4. Success and Retention Rates by Race by Term.

Termname	FA 01			SP 02			FA 02			SP 03			Total		
Race	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total
Af. Am.	40.9%	63.6%	22	29.4%	47.1%	17	14.3%	28.6%	14	38.9%	61.1%	18	32.4%	52.1%	71
Am. Ind.	33.3%	50.0%	6	45.5%	54.5%	11	11.8%	47.1%	17	46.7%	60.0%	15	32.7%	53.1%	49
Asian	50.0%	75.0%	24	35.7%	53.6%	28	56.0%	68.0%	25	29.3%	61.0%	41	40.7%	63.6%	118
Filipino	71.4%	71.4%	7	33.3%	50.0%	6	46.2%	69.2%	13	40.0%	86.7%	15	46.3%	73.2%	41
Hispanic	43.0%	62.0%	142	46.5%	70.4%	159	39.9%	68.5%	203	47.7%	68.6%	264	44.5%	67.7%	768
Other	60.0%	70.0%	10	84.6%	84.6%	13	48.0%	64.0%	25	39.5%	60.5%	38	51.2%	66.3%	86
Unknown	58.3%	91.7%	12	43.8%	93.8%	16	60.0%	84.0%	25	65.6%	75.0%	32	58.8%	83.5%	85
White	57.7%	71.1%	470	53.6%	70.9%	595	53.9%	69.1%	894	57.8%	73.1%	997	55.8%	71.1%	2,956
TOTAL/AVG.	53.8%	69.3%	693	51.2%	70.1%	845	50.5%	68.4%	1,216	54.2%	71.5%	1,420	52.5%	69.9%	4,174

Legend:

- SuccCnt: Success count
- SuccPct: Success rate
- RetnCnt: Retention count
- RetnPct: Retention rate

Table 5 contains success and retention rates by age by term. There is no immediately data available for analysis of success and retention by age for college overall. Using the standard deviation method, one standard deviation below the average for success would be 46.4% and one standard deviation above the average would be 58.5%. There was not a single age group that had low success rates one standard deviation below the average. **The age groups of 31-40 (58.5%) and 41-50 (61.6%) had higher than one standard deviation above the average success rates.**

One standard deviation from the average for retention rates is 7%, therefore, low would be 62.9% and high 76.9%. No age groups were low in retention rates. **The age group with high in retention rates was 41-50 (77.5%).**

The age group of persons older than 60 years of age had small n, therefore, it was not commented in this study.

Table 5. Success and Retention Rates by Gender by Term.

Termname	FA 01	FA 01	FA 01	SP 02	SP 02	SP 02	FA 02	FA 02	FA 02	SP 03	SP 03	SP 03	Total	Total	Total
AgeRange	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total	SuccPct	RetnPct	Total
< 18	61.5%	76.9%	13	52.9%	73.5%	34	67.6%	85.3%	34	48.3%	67.2%	116	53.3%	72.1%	197
18 - 20	51.9%	66.7%	183	46.8%	63.4%	186	50.3%	67.4%	288	54.7%	68.6%	430	51.7%	67.1%	1,087
21 - 25	54.5%	69.9%	176	42.6%	68.2%	242	41.5%	60.3%	340	51.8%	72.1%	301	46.8%	67.0%	1,059
26 - 30	48.5%	61.6%	99	48.2%	62.3%	114	46.4%	68.1%	138	49.1%	70.1%	167	48.1%	66.2%	518
31 - 40	54.3%	75.0%	116	61.8%	77.9%	136	57.0%	73.2%	228	60.5%	77.6%	205	58.5%	75.8%	685
41 - 50	57.4%	69.1%	68	65.6%	83.9%	93	62.0%	78.5%	121	60.7%	76.6%	145	61.6%	77.5%	427
51 - 60	58.1%	74.2%	31	61.1%	69.4%	36	53.8%	72.3%	65	50.0%	63.0%	46	55.1%	69.7%	178
>60	85.7%	100.0%	7	66.7%	100.0%	3	50.0%	50.0%	2	0.0%	50.0%	2	64.3%	85.7%	14
TOTAL/AVG.	53.8%	69.3%	693	51.2%	70.0%	844	50.5%	68.4%	1,216	54.1%	71.3%	1,412	52.4%	69.9%	4,165

Legend:

SuccCnt: Success count
 SuccPct: Success rate
 RetnCnt: Retention count
 RetnPct: Retention rate

Findings for Research Question Two:

Recall Research Question Two states that “What are the patterns of former online students taking additional online courses”. The following several tables attempt to partially address this question. The first sub-question [pertains](#) to the number and rate of first-time online students returning for more online courses the second semester. Table 6 shows the rate of returning by each cohort tracked in the study. For the cohort of first-time online students in fall 2001, 18% of them returned to one or more online classes. Please note that many may have enrolled in non-online classes, which is not tracked by this study. [Also worth noting is the fact that the course BIO7 was offered for DH students who must take it to fulfill their graduating requirements, but it was not a course required for the student body in general. In this case, we would welcome the fact that few or none returned for the same class, because all should be successful on their first try.](#) There is a clear trend that more first-time online students are returning for more online courses, as evidenced by an increase from 18% for the fall 2001 cohort to 26% for the fall 2002 cohort.

Table 6. Cohort (first-time online students of a term) Returning for More Online Courses.

FA01	SP02	Rate
420	75	18%
SP02	FA02	Rate
522	99	19%
FA02	SP03	Rate
661	169	26%

Note, the above counts are unduplicated counts and after removing those online students who were not first-time online students in a cohort term.

Tables 7, 8, and 9 display the return rate for cohorts defined as first-time online students enrolled in a given term. The average rates and total counts for the three cohorts are different from those in Table 6 due to the fact students in Tables 7, 8, and 9 had duplicated counts outside departments. In other words, a student is only counted once within a department, but counted twice if s/he was enrolled in another department. It is worth noting that the return rate, as defined, is meant for obtaining a general impression of the trend of students returning for more online classes and they may or may not return for more classes in the same department that they took classes the previous semester. Strictly basing conclusions on return rate by department may lead to erroneous decisions. Any first time online students tracked by this study may come back and enroll in the same department or a different department. For example, in Table 7, there was one enrollment in ECE in spring 2002, but no enrollment in ECE in the previous semester. This is due to the fact that ECE was not offered in the online mode in the previous semester.

Other departments offered no online courses in a given semester are:
 CABT (only offered/started in fall 2002 and spring 2003)
 DM (only offered/started in fall 2002 and spring 2003)
 FR (only offered in fall 2001, spring 2002, fall 2002)
 JOURN (only offered fall 2002 and spring 2003)

In all three tables (Tables 7, 8 and 9), readers are encouraged to look at the overall return rate at the bottom of the tables before they examine the return rate for individual departments.

Table 7 to the right indicates the rate of fall 2001 cohort returning for more online courses the next term (spring 2002). It must be noted that not returning for more classes in a certain department could be a result of many factors, such as students having successfully completed their study in that department. Also, students may have returned for online classes in other departments, which explains why there was no student in ECE in fall 2001 (not offered online), but one student was in ECE in spring 2002.

The average rate of return was 19%. Students who initially enrolled in ANTHR, SPAN, and ACCT had higher than 30% return rate. Students who initially enrolled in HIST, FR, LIBR, CJ, BIO*, and MUS had less than 10% return rate.

Table 7. Return Rate by Department

Dept	FA 01	SP 02	Rate
ACCT	39	12	31%
ANTHR	12	5	42%
BIO	13	1	8%
CG	19	4	21%
CJ	45	3	7%
DM	21		0%
ECE		1	-
ENGL	37	14	38%
FR	21	1	5%
GEOG	34	5	15%
HIST	20		0%
HS	18	4	22%
LIBR	16	1	6%
MATH	11	2	18%
MUS	72	6	8%
PS	40	11	28%
SPAN	53	19	36%
Ttl/Avg	471	89	19%

*see note on page 5.

Table 8 to the right indicates the rate of spring 2002 cohort returning for more online courses the next term (fall 2002). It must be noted that not returning for more classes in a certain department could be a result of many factors, such as students having successfully completed their study in that department. Also, students may have returned for online classes in other departments, which explains why there was no student in CABT in spring 2002, but 3 students were in CABT in fall 2002.

The average rate of return was 24%. Students who initially enrolled in HS, MUS, ENGL, and LIBR had higher than 30% return rate. Students who initially enrolled in CG, CJ, ECE*, FR, ANTHR, BIO** had less than 10% return rate.

* see note on page 6.

** see note on page 5.

Table 9 to the right indicates the rate of fall 2002 cohort returning for more online courses the next term (spring 2003). It must be noted that not returning for more classes in a certain department could be a result of many factors, such as students having successfully completed their study in that department. Also, students may have returned for online classes in other departments, which explains why there was no student in OCEAN in fall 2002 ([not offered online in fall 2002](#)), but 2 students were in OCEAN in spring 2003.

The average rate of return was 29%. Students who initially enrolled in MATH, PS, ENGL, ACCT, CG, CJ, and SPAN had higher than 30% return rate. Students who initially enrolled in FR, BIO, GEOG, and DM had less than 10% return rate.

Table 8. Return Rate by Department

Dept	SP 02	FA 02	Rate
ACCT	95	24	25%
ANTHR	33	2	6%
BIO	17	1	6%
CABT		3	-
CG	24		0%
CJ	29	1	3%
ECE	25		0%
ENGL	47	18	38%
FR	32		0%
GEOG	23	6	26%
HS	21	15	71%
JOURN		5	-
LIBR	24	9	38%
MATH	31	4	13%
MUS	46	20	43%
PS	55	14	25%
SPAN	52	11	21%
Ttl/Avg	554	133	24%

Table 9. Return Rate by Department

Dept	FA 02	SP 03	Rate
ACCT	93	34	37%
ANTHR	34	8	24%
BIO	17	1	6%
CABT	32	4	13%
CG	27	9	33%
CJ	18	6	33%
DM	15	1	7%
ENGL	78	30	38%
FR	22		0%
GEOG	42	3	7%
HS	56	6	11%
JOURN	18	3	17%
LIBR	44	14	32%
MATH	45	18	40%
MUS	53	19	36%
OCEAN		2	-
PS	68	27	40%
SPAN	88	32	36%
Ttl/Avg	750	217	29%

Table 10 contains return rate statistics by race by cohort. Cohorts were determined as first-time online students enrolled in a semester and returned for more online classes the next semester. It should be noted that different from Tables 7, 8, and 9,

these counts are completely unduplicated counts; therefore, the rates match those in Table 6.

There were considerable variations of return rates within each race from cohort term to cohort term; therefore the use of the average of cohort return rate (the last column in Table 10) may not be the best gauge. Nonetheless, it appears to indicate that American Indians and Filipinos had quite low return rate (lower than 15%), while students in categories of Other, Unknown, and White had higher rates (higher than 20%). The large number of students in the Other and Unknown categories may be due to the fact that by virtue of online classes, those who prefer to remain anonymous tend to be attracted to these classes.

Table 10. Return Rate by Race.

	FA 01	SP 02	Rate	SP 02	FA 02	Rate	FA 02	SP 03	Rate	Avg
Af. Am.	12	3	25%	9	1	11%	10	1	10%	16%
Am. Ind.	5		0%	7	1	14%	6	1	17%	11%
Asian	11	2	18%	20	1	5%	15	4	27%	15%
Filipino	4	1	25%	5		0%	7	1	14%	13%
Hispanic	76	10	13%	95	13	14%	110	27	25%	18%
Other	7	2	29%	7	4	57%	13	5	38%	41%
Unknown	10		0%	11	4	36%	16	9	56%	35%
White	295	57	19%	368	75	20%	484	121	25%	22%
Ttl/Avg	420	75	18%	522	99	19%	661	169	26%	21%

Future Studies

This study focused on students who were taking online courses (We can call them converts). Further analysis may be necessary to investigate how many students initially enrolled at Cabrillo as regular students before they began to take online classes. This may provide information on how much of a draw online courses are and how long it takes before a regular student ventures into the online realm. Also, answers to the question of the type of students who tend to take online classes may also be useful.