

Memorandum

Institutional Research and Planning

To: Martha Kanter, Chancellor
Board of Trustees
Presidents, Foothill and De Anza Academic Senates

From: Bob Barr, Executive Director

Date: January 31, 2006

Re: Results of the Plus/Minus Grading Pilot Study

In April 2004 the Board of Trustees revised the Grading Policy (Policy #6125) approving the implementation of plus/minus grading “unless substantial adverse impact on students is demonstrated” during a pilot study implementation period from Fall 2004 through Fall 2005.

The result of the study conducted by Institutional Research and Planning (attached) **shows no substantial adverse impact on students.**

The basic findings of the study are:

- The average GPA dropped 0.01 of a point from 2.92 to 2.91 when student GPAs are calculated under the plus/minus scheme. This is neither a substantial adverse effect nor a statistically significant difference. It is the smallest possible difference in GPA's calculated to two decimal places.
- It was expected that some proportion of 4.00 students would earn GPAs less than 4.00 under the plus/minus scheme since the plus/minus grading scheme includes an A- grade but no A+ grade. The study found that for 4.00 students with 45 or more attempted units of credit (one full year) about 44% earn less than 4.00 under plus/minus grading. However, 97% of those with 45 or more units earn a GPA of 3.95 or better under plus/minus grading and the average GPA of all 4.00 students drops only 0.03 points to 3.97 under plus/minus grading.

Therefore, it is the opinion of the researchers that the pilot study reveals no substantial adverse effect on student grades on average.

January 30, 2006

To: Bob Barr
Executive Director of Institutional Research and Planning

From: Andrew LaManque
De Anza College Researcher

Subject: A Review of the Plus / Minus Grading Pilot

The Plus / Minus Grading Pilot began in the fall of 2004, allowing faculty to assign plus minus grades that did not count towards a students' grade point average (GPA) until fall 2006. 18% of the sections taught have utilized plus or minus grades during the pilot.

Since the plus / minus grading scheme assigns 3.7 quality points for an A- but only 4.0 quality points for an A+, the assumption, *a priori*, is that, on average, there would be a slight downward shift in the grade distribution. This assumption is supported by the actual grade distribution shown in Figure 1 where the grades for plus / minus sections are compared to grades in all other sections. Under either grading scheme more than twice as many A as C grades were awarded by FHDA faculty (note: a C- is not a valid grade).

The Impact of Revised Board Policy 6125 on Grading

The Board approved a partial implementation period to "study the effects of adoption" with full implementation to follow "unless substantial adverse impact on students is demonstrated." To study the impact on students the grades of students with at least 3 plus / minus sections over the fall 2004 – fall 2005 period were examined. The GPA's for the students were re-calculated using the current grading method and the plus / minus scheme. This approach was thought to best replicate actual practice by including students with multiple plus / minus sections. For students with 3 or more plus minus sections:

- The average GPA dropped .01 from 2.92 to 2.91 under plus / minus grading (Figure 2). Using the T-test of differences between means, there is no statistical difference between the two GPA's.
- On average, students that received an increase in GPA under plus / minus grading had a lower GPA (2.79) than students with a reduction (3.11). (Figure 2)
- 96% of the students with 3 more plus / minus sections had calculated plus / minus GPAs between 0.00 and 0.10 of the calculated GPA using letter grades. (Figure 3)
- For the students with a calculated GPA of 4.00 under the current grading scheme, the average GPA would drop to 3.97 under plus / minus grading. (Figure 4)
- 92% of 4.0 students under the current grading method had a calculated GPA under plus / minus grading between 0.00 and 0.10 of a 4.00. This difference narrows when the number of units attempted increases for 4.00 students with 45 or more units: 100% of the plus / minus GPAs were between 0.00 and 0.08 of a 4.00. (Figure 4)

Figure 1

**FHDA Assigned Grades
Fall 2004 thru Fall 2005**

Grade	+ - Sections		All Other Sections	
	Number of Grades	Percent of Column	Number of Grades	Percent of Column
A+	2,126	4%		
A	11,750	23%	116,052	40%
A-	6,175	12%		
Subtotal	20,051	39%		
B+	3,840	8%		
B	7,487	15%	54,326	19%
B-	3,881	8%		
Subtotal	15,208	30%		
C+	2,182	4%		
C	6,500	13%	36,245	13%
Subtotal	8,682	17%		
D+	367	1%		
D	1,963	4%	8,752	3%
D-	268	1%		
Subtotal	2,598	5%		
F	3,391	7%	11,547	4%
P	806	2%	54,415	19%
NP	138	0%	5,764	2%
I	283	1%	974	0%
Total	51,157	100%	288,075	100%

Figure 2

**FHDA + - Grading Pilot
Change from Old to New GPA by Difference Group
Students with 3 or more + - Sections**

Difference Group	Num	Avg GPA - Old Scale	Avg GPA - New Scale	New Minus Old
NEW HIGHER	1,673	2.78	2.83	0.05
SAME	2,643	2.78	2.78	0
NEW LOWER	3,014	3.11	3.06	-0.05
TOTAL	7,330	2.92	2.91	-0.01

Figure 3

**FHDA + - Grading Pilot
Change from Old to New GPA
By the Amount of Difference
Students with 3 or more + - Sections**

Difference Group	Num	Per of Column
SAME	2,643	36%
NEW .01 to .10 different (+ -)	4,398	60%
NEW .11 to .29 different (+ -)	289	4%
Total	7,330	100%

Figure 4

FHDA + - Grading Pilot
New GPA for Students with a 4.0 Old GPA
Students with 3 or more + - Sections

Difference Group	New Minus Old	Num	Cum %	New Scale
SAME	0.00	260	57.8%	4.00
NEW -.01 to -.10 lower	-0.01	2	58.2%	3.99
	-0.02	27	64.2%	3.98
	-0.03	27	70.2%	3.97
	-0.04	19	74.4%	3.96
	-0.05	19	78.7%	3.95
	-0.06	12	81.3%	3.94
	-0.07	14	84.4%	3.93
	-0.08	9	86.4%	3.92
	-0.09	11	88.9%	3.91
	-0.10	14	92.0%	3.90
NEW -.11 to -.29 lower	-0.11	3	92.7%	3.89
	-0.12	2	93.1%	3.88
	-0.13	2	93.6%	3.87
	-0.15	6	94.9%	3.85
	-0.16	3	95.6%	3.84
	-0.18	3	96.2%	3.82
	-0.19	4	97.1%	3.81
	-0.20	5	98.2%	3.80
	-0.21	1	98.4%	3.79
-0.29	1	98.7%	3.71	
NEW -.3 or lower	-0.30	6	100.0%	3.70
Total		450		3.97

Students with 45 + Quality Hours (Units Attempted)
(The most relevant finding for 4.00 students completing degrees or transferring.)

Difference Group	New Minus Old	Num	Cum %	New Scale
SAME	0.00	59	55.7%	4.00
NEW -.01 to -.10 lower	-0.01	1	56.6%	3.99
	-0.02	19	74.5%	3.98
	-0.03	17	90.6%	3.97
	-0.04	2	92.5%	3.96
	-0.05	5	97.2%	3.95
	-0.06	1	98.1%	3.94
	-0.07	1	99.1%	3.93
	-0.08	1	100.0%	3.92
Total		106		3.99