Grades and Learning Outcomes:
How Do We Know What Students Learn?

Whenever we conduct an assessment or evaluation of an academic program, initiative or course, we ask what outcome measures will best show whether the activity was successful. Often, the first measure that comes to mind, and the one that is most accessible, is students' grades or GPA. Do we see an improvement in grades after change was made in a program; do students in a treatment group have higher grades compared to a control group? On the surface, it seems to be a straightforward approach. However, is it enough to look just at grades?

The purpose of this brief is to offer food for thought about grading standards, the meaning and use of grades, and the kinds of measures that will really tell us what helps students learn and graduate. According to a national study of the evolution of grading at American colleges and universities, the most common grade given to undergraduates is an "A." It represented 43% of all letter grades in 2009. This is an increase of 28 percentage points since 1960[1]. This trend poses an obvious question: are students smarter nowadays, or are the standards lower?

Academic rigor and related grading issues were a discussion topic at the recent Provost's Leadership Team retreat. The percentage of A's earned by Fresno State undergraduates is similar to the national average. It was 40.4% in fall 2010[2]. Grades earned by Fresno State majors vary across the disciplines. Average GPAs of engineering and business majors are lower compared to average GPAs of students from CAH, CHHS, and KSOEHD (Figure 1). According to national patterns, engineering-focused schools do tend to grade more stringently than those emphasizing the liberal arts[1]. However, what is interesting at Fresno State is that the gap in GPAs noticeably widened over the last 20 years (Figure 1). Many types of changes may underlie these data. Why do you think this grading trend is happening?

Do better prepared students earn higher grades? Not always. Our analysis of upper-division writing courses suggests that it is easier to pass some courses than others. For example, students enrolled in Phil 113W and Engl 115W were more prepared based on their cumulative GPA than were students enrolled in Plant 110W and AAIS 104W (Figure 2), yet they passed those courses at considerably lower rates. Overall, the correlation between course grades and cumulative GPA was small (.39). This suggests that grading standards are different across writing courses in various disciplines.

There is also variation in grading by instructor type. Part-time lecturers tend to grade higher than other types of instructors. Table 1 shows that at all three course levels (upper, lower and graduate), students in classes taught by part-time lecturers, on average, receive higher grades than students in classes taught by full-time lecturers, and tenured and tenure-track faculty. On average, students in each instructor-type category and course level were comparably prepared based on cumulative GPA.

There can be large differences in grading even within instructor type across sections of the same course. Table 2 shows examples of two courses (Drama 62 and Hist 12) with average grades earned by students in those courses and their cumulative GPA. In Drama 62, students taught by Tenured Faculty 1 received on average much lower grades than students taught by Tenured Faculty 3 though students were equally prepared (avg. course grade 2.80 vs 3.62, while avg. cumulative GPA 2.72 vs 2.76 respectively). In Hist 12, students taught by Part-Time Lecturer 5 received a much lower average grade than students taught by Part-Time Lecturer 9 (2.22 vs 3.33); even though Lecturer 5 students had a slightly higher average cumulative GPA than Lecturer 9 students (2.88 vs 2.76).

Is an A in one class the same as an A in another? It is not, according to comments made by Fresno State seniors who completed the National Survey of Student Engagement (NSSE) in 2011. Here are some of the comments (original wording):

- *Grade standard are way too different depend on department and professor*

- *There is no consistency with expectations from students. If you take the same exact class with two different professors, you will have completely different experiences. In one class you may give no effort, never show up at class, not learn a thing, and pass with an easy A. In the other class, you can show up every day, dedicate an incredible amount of hours, and get failed without the professor thinking twice about it.*

- *I have received grades I clearly did not deserve and yes I do get mostly A's. When you receive a C in a class that is an English based class and then take another class with harder content and receive an A it is clearly the instructor.*

- *Sometimes getting grades felt like some sort of random lottery.*

All this suggests that grades are not very good indicators of what or how much students learn. Clearly, grades are not refined enough measures to tell us what best helps students learn or to be the sole criterion for evaluating the effectiveness of programs or courses. Consequently, if we really want to know, we need to think about and discuss what will best tell us.

Figure 1
Undergraduate Campus GPA Across 20 Years (Fall Semesters)
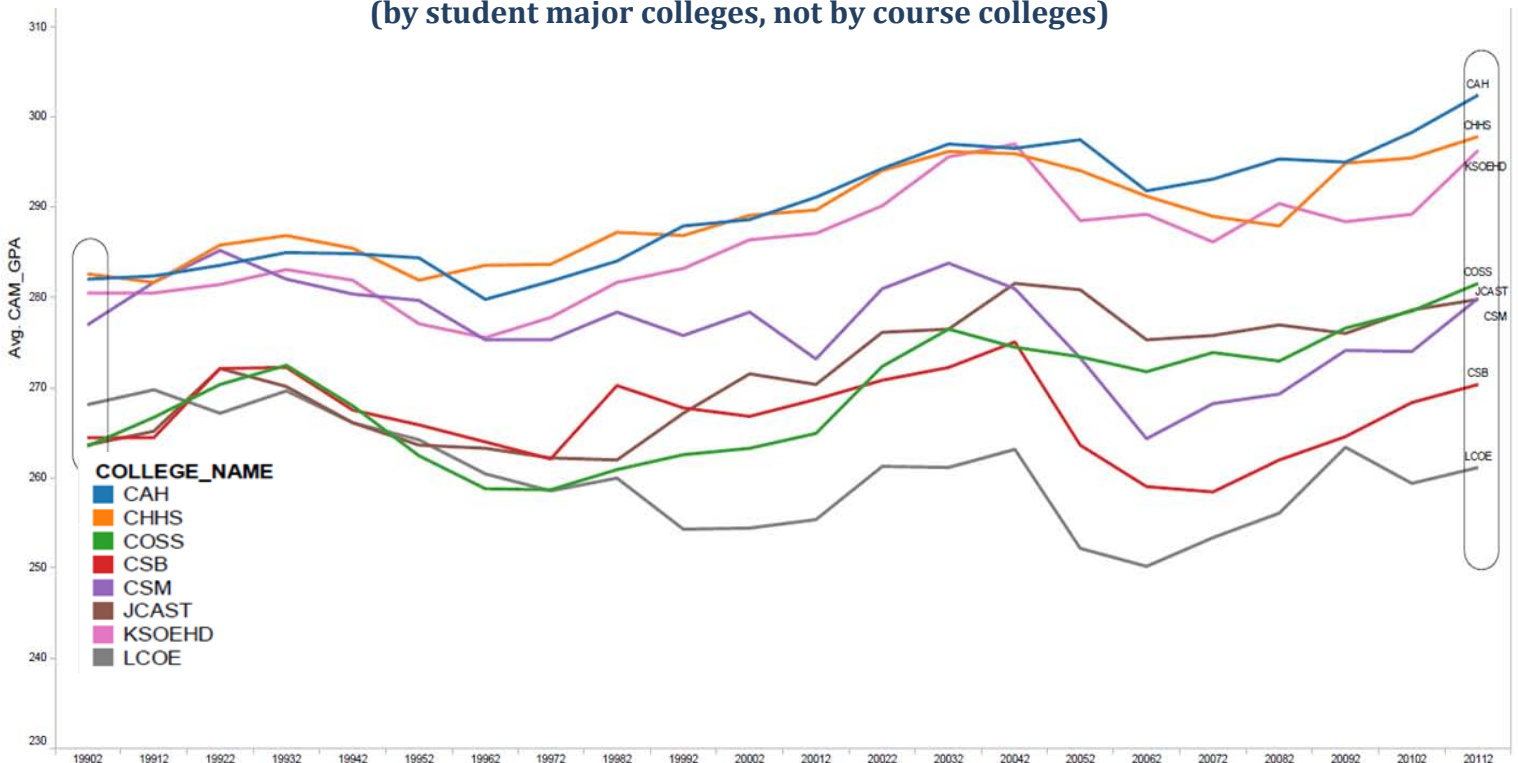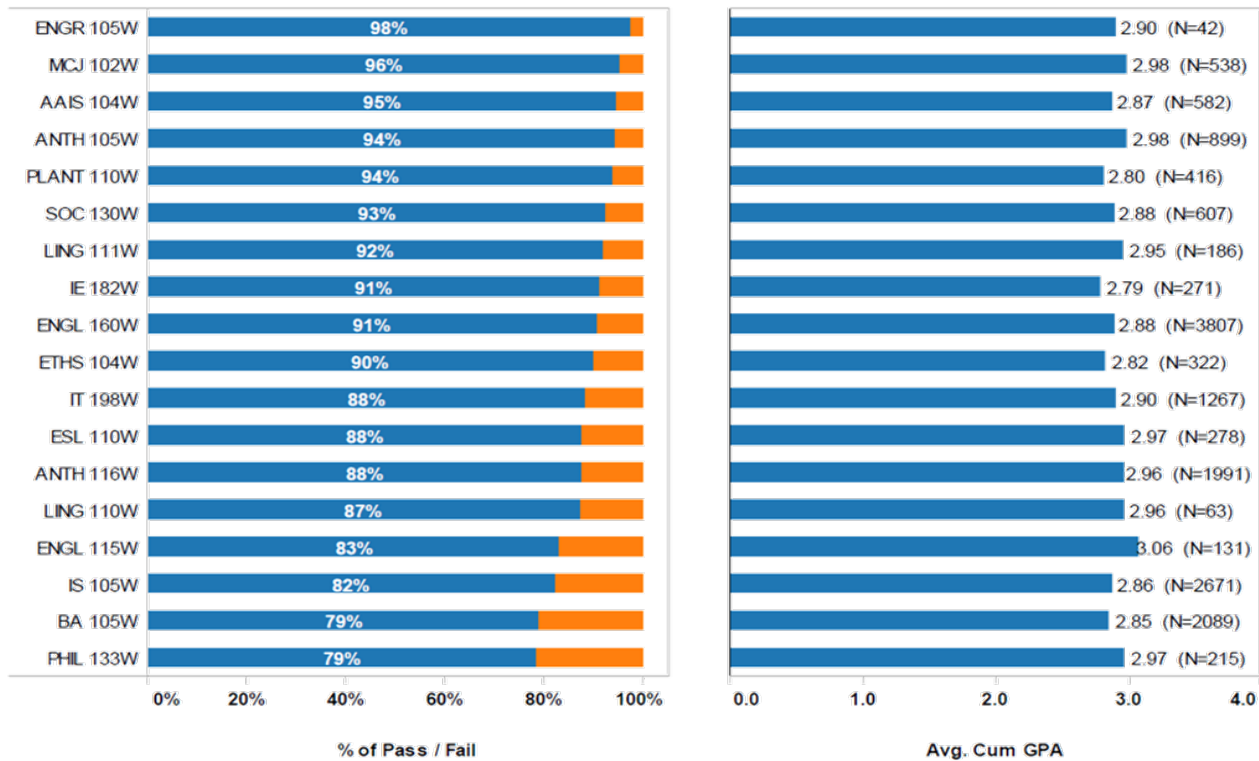**(by student major colleges, not by course colleges)**

Figure 2
Pass/Fail Ratio and Average Cumulative GPA of Students
in Upper Division Writing Courses*
Aggregated Data Fall 2002 – Fall 2007)

Course	% Pass	Avg. Cum GPA
ENGR 105W	98%	2.90 (N=42)
MCJ 102W	96%	2.98 (N=538)
AAIS 104W	95%	2.87 (N=582)
ANTH 105W	94%	2.98 (N=899)
PLANT 110W	94%	2.80 (N=416)
SOC 130W	93%	2.88 (N=607)
LING 111W	92%	2.95 (N=186)
IE 182W	91%	2.79 (N=271)
ENGL 160W	91%	2.88 (N=3807)
ETHS 104W	90%	2.82 (N=322)
IT 198W	88%	2.90 (N=1267)
ESL 110W	88%	2.97 (N=278)
ANTH 116W	88%	2.96 (N=1991)
LING 110W	87%	2.96 (N=63)
ENGL 115W	83%	3.06 (N=131)
IS 105W	82%	2.86 (N=2671)
BA 105W	79%	2.85 (N=2089)
PHIL 133W	79%	2.97 (N=215)

% of Pass / Fail   Avg. Cum GPA

* Excluded W-Courses with less than 30 students enrolled

Table 1
Average Grade and Students' Cumulative GPA
by Course Level and Instructor Type
(Aggregated Fall 2007 - Fall 2010 Data)

Course Level	Avg. Grade				Avg. Cum GPA Beginning of Term			
	Lecturer-Full time	Lecturer-Part time	Tenured Faculty	TT Faculty	Lecturer-Full time	Lecturer-Part time	Tenured Faculty	TT Faculty
Lower-Div.	2.55	2.90	2.51	2.67	2.87	2.84	2.89	2.88
Upper-Div.	3.04	3.16	2.93	2.99	3.00	2.99	3.00	2.97
Graduate	3.73	3.82	3.68	3.71	3.69	3.73	3.69	3.68

Table 2
Average Grade and Students' Cumulative GPA
(Aggregated Fall 2007 - Fall 2010 Data)

Course	Faculty	Avg. Course Grade			Avg. Cum. GPA Beginning of Term			Number of Records		
		Lecturer -Full time	Lecturer -Part time	Tenured Faculty	Lecturer -Full time	Lecturer -Part time	Tenured Faculty	Lecturer -Full time	Lecturer -Part time	Tenured Faculty
DRAMA 62: Theatre Today	Faculty 1			2.80			2.72			230
	Faculty 2			3.44			2.86			944
	Faculty 3			3.62			2.76			1072
HIST 12: Am Hst Fr 1877	Faculty 4		2.07			2.66			104	
	Faculty 5	2.18	2.22		2.85	2.88		145	168	
	Faculty 6		2.43			2.79			624	
	Faculty 7		2.90			2.73			98	
	Faculty 8		3.04			2.99			56	
	Faculty 9	2.75	3.33		2.84	2.76		72	125	

References

[1]*Teachers College Record*. Where a is ordinary: the evolution of american college and university grading, 1940–2009. 114(7). Retrieved September 1, 2011, from http://www.tcrecord.org/Content.asp?ContentId=16473.

[2]California State University, Fresno. (2011). Grading percentage and GPA by college and department. Retrieved September 2011, from http://www.csufresno.edu/irap/data/grades.shtml