



## Active Learning

October 2001

### Purpose

This survey studies how students differentiate between their 'best' and 'worst' class from last year and reviews the impact of specific instructional approaches, class environment, teaching style, number of students in class, study time and grades on their choices.

### Implications/Highlights

Students noted that the instructors of their 'best' classes were more likely to use motivating learning activities. 'Best' classes tended to be smaller than 'worst' classes. Students studied more for their smaller 'best' classes.

### Participation Rate

N = 604 (62%) agreed to participate

N = 364 (38%) did not agree to participate

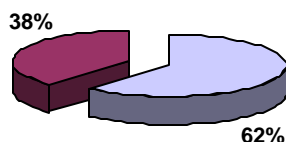


Figure 1. Participation rate

### Findings

Students reported studying on average 5.3 hours/week preparing for their 'best' class and 4.8 hours/week for their 'worst' class. More students reported studying zero hours for their 'worst' class (5%) than those who reported studying zero hours for their 'best' class (2%).

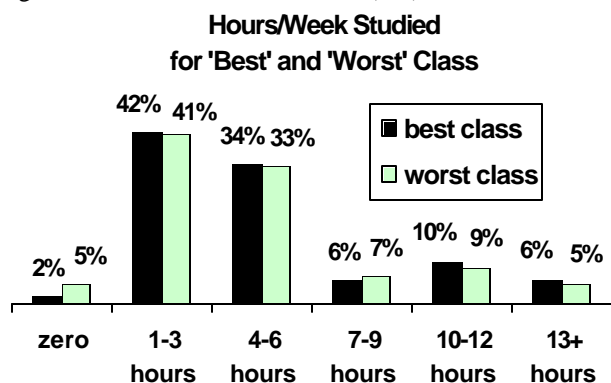


Figure 2. There was not a significant difference in the number of hours students reported studying for their 'best' and 'worst' classes

Six percent of the 'best' and two percent of the 'worst' classes were identified as honors courses.

\*Statistically significant at the .05 level

The average size of the 'best' classes (mean = 104 students) was smaller than the average size of the 'worst' classes (mean = 169 students.) Sophomores reported having larger classes than seniors for both their 'best' and 'worst' classes.\*

	Class Size	
	'best' class	'worst' class
sophomores	146 students	212 students
seniors	79 students	143 students

Students studied fewer hours/week for their larger 'best' classes.\*

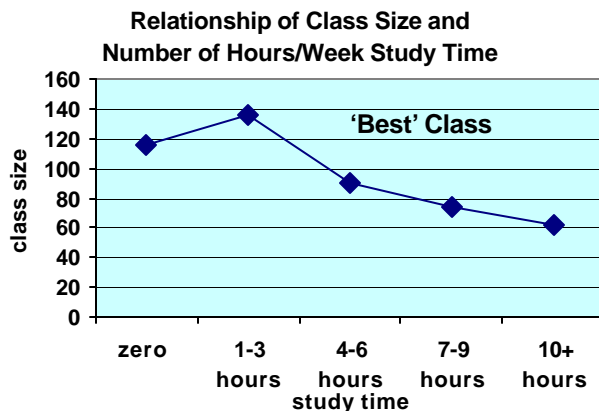


Figure 3. There was a relationship between class size and number of hours/week study time.

There was a difference between teaching style and number of hours studied for both the 'best' and 'worst' classes.\*

	'best' class	'worst' class
lab sessions	6.5 hrs/wk	4.6 hrs/wk
mostly lecture	5.3 hrs/wk	4.9 hrs/wk
mostly discussion	4.7 hrs/wk	4.1 hrs/wk
mix of lecture/discussion	4.7 hrs/wk	5.1 hrs/wk
mix of in class/online	6.0 hrs/wk	-
other	7.4 hrs/wk	5.2 hrs/wk

For further information, please contact Dr. Betty Moore at the Student Affairs Research and Assessment Office.

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Student Affairs

Students were asked whether the classes they chose fulfilled requirements for their major or minor, fulfilled general education requirements, or were free electives.

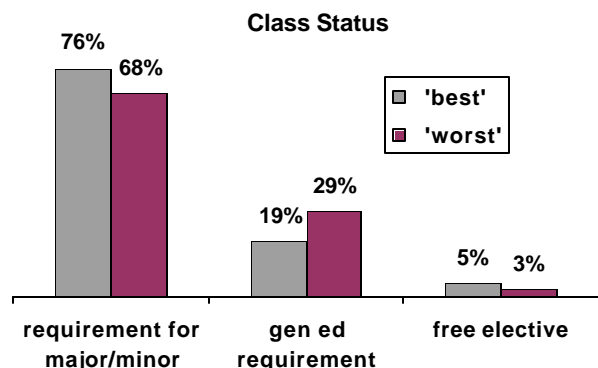


Figure 4. Students were asked whether the class they chose as their 'best' and 'worst' from last year fulfilled a requirement or was a free elective.

Respondents reported studying more for courses that fulfilled requirements for their major or minor for both their 'best' or 'worst' classes last year.

#### Average Number of Hours/Week Studied

	'best' class	'worst' class
fulfilled requirement for major or minor	5.8 hours	5.6 hours
fulfilled requirement for general education	3.6 hours	3.6 hours
free elective	3.4 hours	3.2 hours

Some students were unable to define the teaching style of their classes although many said that instructors tended to use lectures in their 'best' and 'worst' classes.

#### Teaching Style in 'Best' and 'Worst' Class

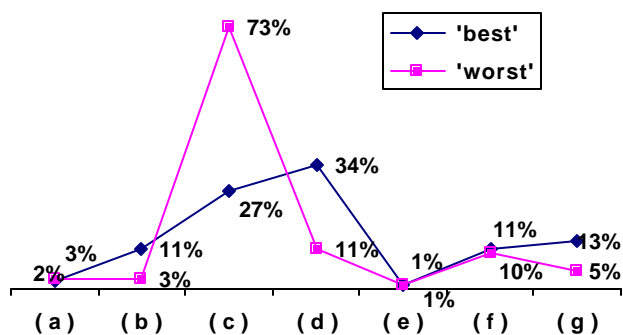


Figure 5. Students were asked to define the teaching style of their 'best' and 'worst' classes

- (a) lab
- (b) discussion
- (c) lecture
- (d) mix lecture/discussion
- (e) mix in class/online
- (f) other
- (g) don't know

A majority thought the instructors of their 'best' classes created a class environment conducive to learning, engaged them in the course activities, clearly defined their responsibilities, and increased their sense of personal competence.

#### Instructor Managed Class Environment

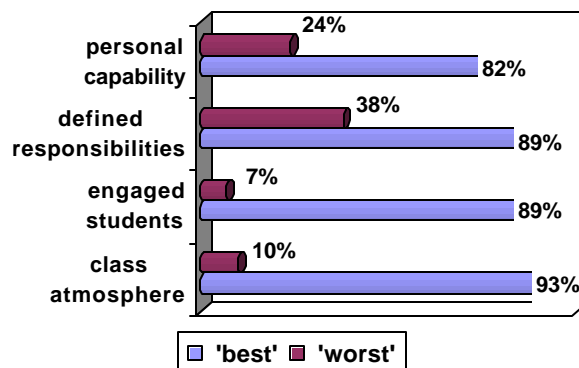


Figure 6. Instructors managed more positive class environment for 'best' classes than for 'worst' classes

Students were asked about the contribution to the class environment of specific learning activities.

Active Learning Elements	'Best'	'Worst'
problem-based activities	49%	24%
lab work	25%	17%
team projects	40%	14%
role playing	17%	4%
discussions w/students	58%	14%
independent research	41%	13%
question/answer	50%	14%
writing assignments	46%	22%
multiple choice exams	40%	43%
contact w/instructor	56%	11%
online communication w/instructor	39%	12%
online communication w/other students	28%	9%
online materials	35%	28%

More of the men (60%) than of the women (38%) said that problem-based activities contributed to the environment of their 'best' class.\* More of the Seniors (25%) than of the Sophomores (16%) said that writing assignments contributed to the environment of their 'worst' class.\*

\*Statistically significant at the .05 level.

Three-fourths of the respondents (76%) said that the instructors of their ‘best’ classes were sensitive to diversity issues while one-third (35%) said the instructors of their ‘worst’ classes were sensitive to diversity issues.

Respondents stated that 60% of the instructors for all of their courses last year used active learning elements in their classes and that 64% of the instructors of their general education courses since coming to college included references, materials, or discussions on racial or intercultural or international issues in their classes.

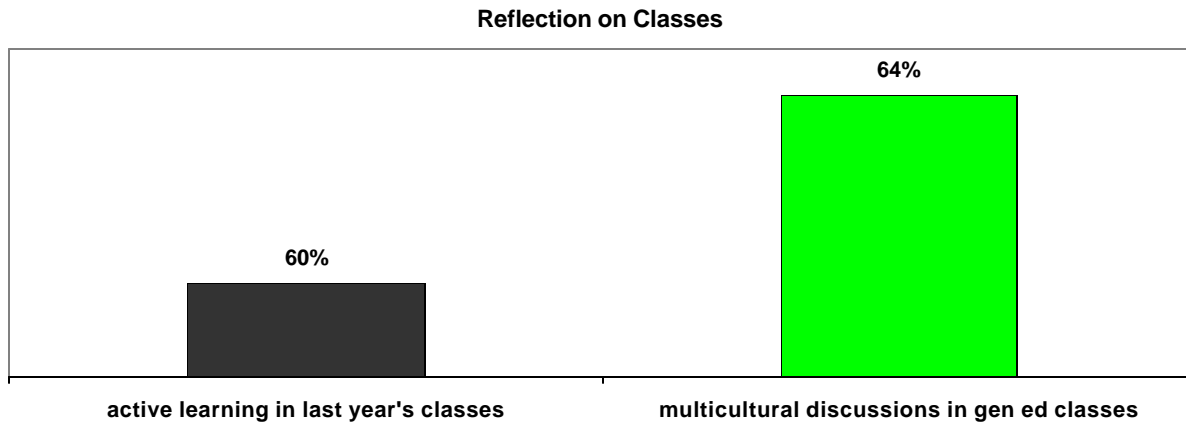


Figure 7. Students reported on activities in all their classes last year and their general education classes since coming to Penn State

Students earned higher grades in their ‘best’ classes.

	<u>‘Best’ Class</u>	<u>‘Worst’ Class</u>
A	52%	19%
A-	14%	9%
B+	15%	8%
B	15%	18%
B-	1%	10%
C+	<1%	6%
C	2%	18%
D	<1%	5%
F	-	1%
no grade	<1%	-
deferred grade	-	-
dropped class	<1%	6%

Students shared their thoughts about the reasons why they chose their ‘best’ and ‘worst’ classes

Reasons For Choosing ‘Best’ Class

- |  |                                    |
|--|------------------------------------|
| - taught us how to look at life differently    | - material I will use in life      |
| - very laid back and flexible                  | - learned how to think             |
| - helped me understand myself better           | - class was entertaining           |
| - brought out artistic capability              | - teacher took time to help        |
| - instructor kept material moving along        | - instructor was incredible        |
| - interactive with other students and teachers | - professor gave insight on papers |
| - teacher presented information clearly        | - small class and knew others      |
| - taught life skills                           | - relaxed setting                  |
| - tied in current events                       | - could openly discuss opinions    |
| - instructor was animated and enthusiastic     | - well organized                   |
| - motivated us to learn                        | - applicable to major              |
| - other classes ‘stunk’                        | - challenged her                   |

### Reasons For Choosing 'Worst' Class

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>- boring, not interesting</li> <li>- didn't engage students</li> <li>- teacher rude and cynical</li> <li>- didn't speak English well</li> <li>- instructions unclear</li> <li>- not relevant to future employment</li> <li>- didn't learn anything</li> <li>- wasn't compensated for work done</li> <li>- no chance to discuss</li> <li>- professor was difficult</li> <li>- unclear answers to student questions</li> <li>- unclear criteria for exams</li> </ul> | <ul style="list-style-type: none"> <li>- student wasn't good at it</li> <li>- instructor lectured poorly</li> <li>- waste of time</li> <li>- no interaction</li> <li>- teacher not organized</li> <li>- poor grade</li> <li>- not very practical</li> <li>- hated team work</li> <li>- didn't like teacher</li> <li>- not enough contact with teacher</li> <li>- teacher was rude</li> <li>- teacher made us feel like fools</li> </ul> |
|---|---|

Students identified the College which offered their 'best' and 'worst' classes. Over fourteen thousand sections/classes were offered at the University Park campus for the Fall and Spring semesters. The survey sample fairly well represents the proportion of undergraduates at University Park by College of Enrollment.

Example of how to read this chart: The College of Liberal Arts offered approximately 26% of the total number of class sections taught last year. Thirty-one percent of the survey respondents named a Liberal Arts section as their 'best' class and twenty-three percent named a Liberal Arts section as their 'worst' class.

### Students Cited 'Best' and 'Worst' Classes by College Offering Course

Proportion of Undergraduates by College +	Survey Respondents by College	College of Enrollment	Proportion of Sections Offered by College	'Best' Class Cited by College	'Worst' Class Cited by College
	N = 604		N = 14,120 ^		
4%	4%	Agricultural Sciences	N = 756 5%	3%	2%
5%	3%	Arts and Architecture	N = 1767 12%	3%	3%
17%	17%	Smeal College of Business	N = 800 6%	12%	15%
8%	8%	Communications	N = 363 3%	6%	3%
2%	3%	Earth and Mineral Sciences	N = 848 6%	4%	5%
7%	7%	Education	N = 1069 8%	4%	4%
16%	19%	Engineering	N = 1636 12%	13%	11%
10%	9%	Health and Human Development	N = 1400 10%	10%	7%
13%	16%	Liberal Arts	N = 3666 26%	31%	23%
7%	8%	Eberly College of Science	N = 1756 12%	11%	26%
7%	4%	DUS	-	<1%	-
2%	2%	School of Information Sciences/Technology	N = 59 <1%	2%	<1%
2%	2%	Missing	-	1%	4%

+ Proportion of Full Time Undergraduates at University Park by College of Enrollment (11/01)

^ Number of Sections Offered by College at University Park Fall and Spring (Registrar 11/01)