

## Second-Semester Freshman Engagement: A NSSE Follow-Up at the Course Level

June 2011

### Highlights:

- ❖ The level of learning was higher than the level of challenge.
- ❖ Students reported being the most engaged in their lecture courses.
- ❖ There was a positive correlation between engagement and satisfaction.

Since 2001 CSU has participated in the National Survey of Student Engagement to provide insight into the undergraduate experience on our campus. Results from the survey are used to inform a variety of initiatives aimed at improving the experience students have both in and out of the classroom. To more precisely identify where issues in the classroom may reside, the current follow-up survey asked second-semester freshmen to respond to seven items about each of their course sections from Fall 2010 and Spring 2011. The items were as follows:

- 1) To what degree did the class challenge you?
- 2) How much did you learn in the class?
- 3) This class had an appropriate mix of learning facts and critical thinking.
- 4) What was the level of effort required of you for the class?
- 5) How much effort did you actually invest in this class?
- 6) The course content motivated me to become more engaged in the class.
- 7) Overall, how satisfied were you with this class?

### Methodology:

The survey was sent in May 2011 via email to 4,166 second-semester freshmen. They were asked to respond on a five-point scale (1 being the lowest; 5 being the highest) to items for each course section. One thousand forty-seven students completed at least part of the survey for a 25% response rate.

The data were analyzed at the university, college, department, and course levels. While medians were calculated, the level of variance was minimal due to the small scale. As a result, averages are presented in the graphs and tables.

Demographics

The survey respondents were representative of FA10 new undergraduates with respect to age and residency. However, the respondent group had a higher proportion of females than the entering class as well as a higher average index score and less racial/ethnic diversity. Table 1 displays the demographics for each group (respondents v. new undergraduates)

Table 1.

Demographics	Survey Respondents	FA10 New Undergraduate
Percent female	69%	55%
Percent resident	81%	79%
Percent minority	14%	17%
Average age	18	18
Average index: Overall	119	114
Average index: AG	119	113
Average index: AHS	115	112
Average index: BUS	123	119
Average index: EG	127	123
Average index: IU	112	108
Average index: LA	119	114
Average index: NS	119	116
Average index: VM	129	125
Average index: WCNR	118	115

There is some evidence in the literature that suggests an inverse relationship between academic preparedness and first-year engagement. Therefore, the results from the survey may not be entirely generalizable. However, they still provide some clear trends worth discussing.

Overall engagement

Overall engagement is defined as the average score across items and is represented by the green line in Chart 1. Chart 1 also displays the average by item. The items were as follows:

- 1) To what degree did the class challenge you?
- 2) How much did you learn in the class?
- 3) This class had an appropriate mix of learning facts and critical thinking.
- 4) What was the level of effort required of you for the class?
- 5) How much effort did you actually invest in this class?
- 6) The course content motivated me to become more engaged in the class.
- 7) Overall, how satisfied were you with this class?

Descriptive statistics are reported in Table 2. All questions were moderately negatively skewed and only a .35 point separated the means; although statistically significant ( $p = .000$ ), the effect size was very small ( $\eta^2 = .008$ ). Within each college, there was some statistically significant variation among responses but the effect size was small ( $p = .000$ ,  $\eta^2 < .037$ ). The college of Engineering showed no statistical difference across items.

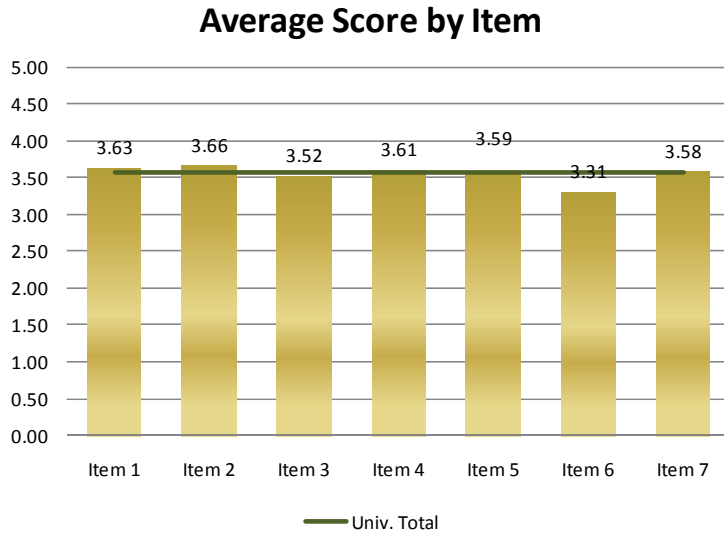
Table 2.

**Descriptive Statistics by Item**

Score							
Item	Mean	N	Std. Deviation	Range	Variance	Kurtosis	Skewness
1	3.63	13335	1.176	4	1.384	-.418	-.625
2	3.66	13335	1.187	4	1.408	-.498	-.609
3	3.52	13331	1.221	4	1.490	-.705	-.471
4	3.61	13331	1.158	4	1.341	-.449	-.568
5	3.59	13330	1.135	4	1.288	-.402	-.545
6	3.31	13331	1.311	4	1.720	-.993	-.313
7	3.58	13331	1.228	4	1.507	-.591	-.574
Total	3.56	93324	1.208	4	1.460	-.598	-.536

Chart 1 displays the college averages for each item compared to the university total average.

Chart 1.



Lowest and Highest Scoring Courses

Table 3 displays the courses and instruction type that scored in the lowest 10% for overall average (courses with less than 30 respondents or an instruction type of 'By Exam' were excluded). It is important to note that not every section of each course scored low and not all students in each course completed the survey. The number of respondents is provided for context.

Table 3. **Lowest Average Scoring Courses**

RESPONSE HDCT	AVG. SCORE	COLLEGE	COURSE	INSTRUCTION
132	2.31	Intra-University	Honors First Year Seminar	Hnr Recitn
115	2.44	Natural Sciences	Physics-Scientists&Engineers I	Recitation
40	2.50	Engineering	Engr First Year Seminar	Seminar
67	2.54	Natural Sciences	Math in the Social Sciences	Lab
83	2.58	Natural Sciences	Personal Computing	Lecture
39	2.59	Natural Sciences	Physics-Scientist&Engineers II	Recitation
67	2.66	Natural Sciences	Math in the Social Sciences	Lecture
38	2.70	Applied Human Sciences	Intro-Health&Exercise Science	Lecture
263	2.72	Natural Sciences	General Chemistry I	Recitation
189	2.72	Liberal Arts	Music Appreciation	Lecture

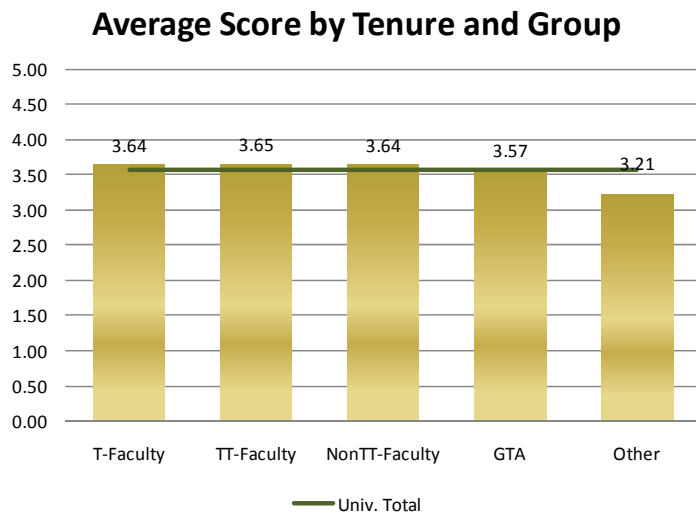
Table 4 displays the courses and instruction type that scored in the highest 10% for overall average. It is important to note that not every section of each course scored low and not all students in each course completed the survey.

Table 4. **Highest Average Scoring Courses**

RESPONSE HDCT	AVG. SCORE	COLLEGE	COURSE	INSTRUCTION
115	4.01	Natural Sciences	Physics-Scientists&Engineers I	Lecture
76	4.05	Applied Human Sciences	Survey of Human Nutrition	Lecture
42	4.13	Natural Sciences	Calculus-Biolog Scientists I	Lecture
104	4.16	Natural Sciences	Calculus-Physical Scientists I	Lecture
41	4.19	Natural Sciences	Calculus-Physicl Scientist III	Lecture
40	4.20	Liberal Arts	Principles of Macroeconomics	Lecture
63	4.29	Intra-University	Biology of Organisms	Lecture
96	4.33	Natural Sciences	Calculus-Physicl Scientists II	Lecture
39	4.41	Natural Sciences	Physics-Scientist&Engineers II	Lecture
34	4.41	Applied Human Sciences	Anatomical Kinesiology	Lab
34	4.51	Applied Human Sciences	Anatomical Kinesiology	Lecture

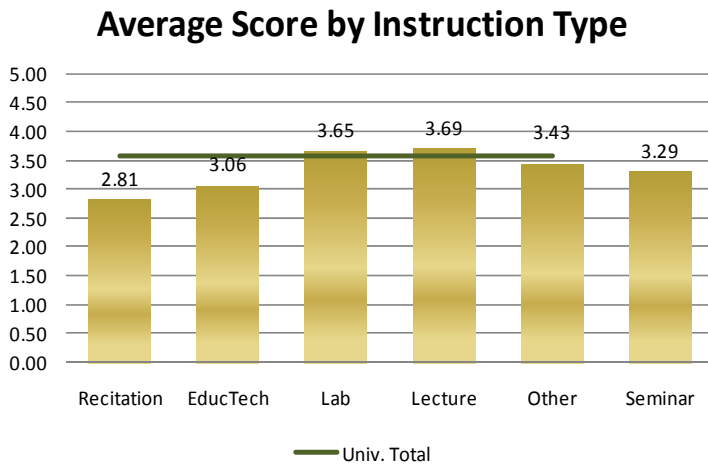
Chart 2 displays results by tenure and employee group. Students were slightly more engaged in courses taught by faculty rather than GTAs or other instructors. Although statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .018$ ). Tenure status within the faculty group was not significant.

Chart 2.



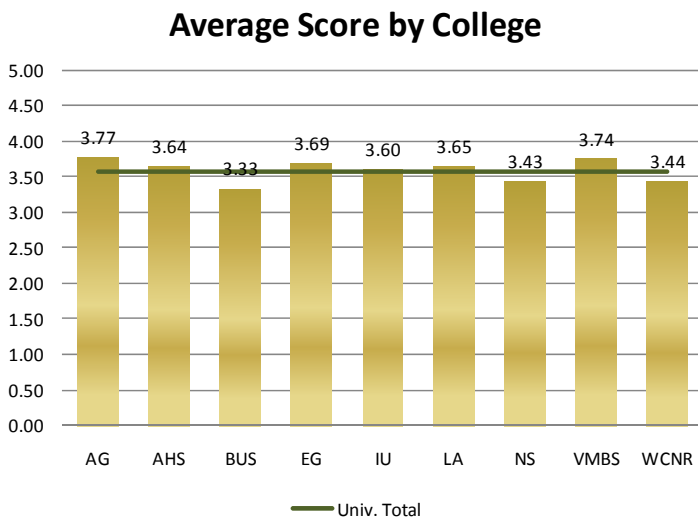
When assessing the relationship of instruction type and engagement, it is somewhat surprising that the highest level of engagement (as defined as the average across items) was found in lecture courses. Although statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .049$ ). Chart 3 displays the results by instructional type. All instructional types were moderately negatively skewed.

Chart 3.



Courses in the College of Business had the lowest overall score of engagement while the College of Agricultural Sciences had the highest. Chart 4 displays the overall average engagement score by college. The range was less than half a point and although statistically significant ( $p = .000$ ), the effect size was very small ( $\eta^2 = .009$ ). All colleges were moderately negatively skewed.

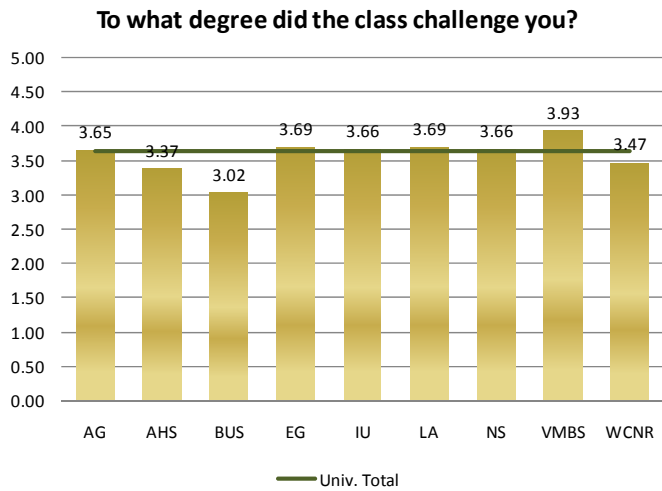
Chart 4.



**Item 1: To what degree did the class challenge you?**

Overall, the average level of challenge was a 3.63 as represented by the green line in chart 5. There was some statistically significant variation among the colleges ( $p = .000$ ). Again, the effect size was small ( $\eta^2 = .012$ ). Courses in the College of Business had the lowest average score (3.02) and the College of Veterinary Medicine and Biomedical Sciences had the highest score (3.93).

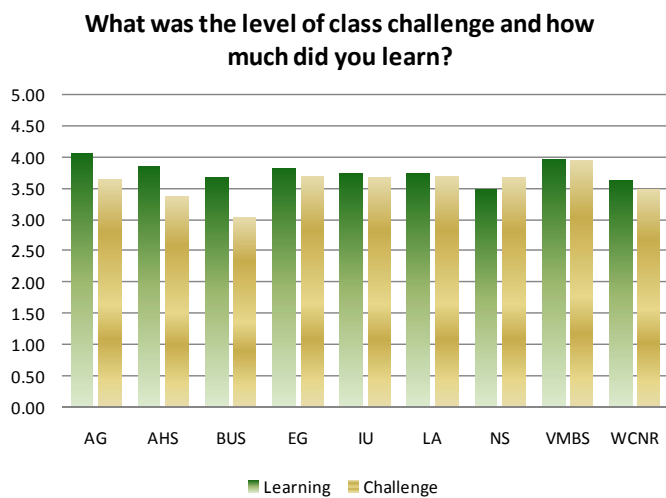
Chart 5.



**Item 2: How much did you learn in the class?**

The overall average level of learning (3.66) was slightly higher than the average level of challenge (3.63). With the exception of the College of Natural Sciences courses, all colleges had lower levels of course challenge than levels of learning. The variation in learning across colleges was statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .016$ ).

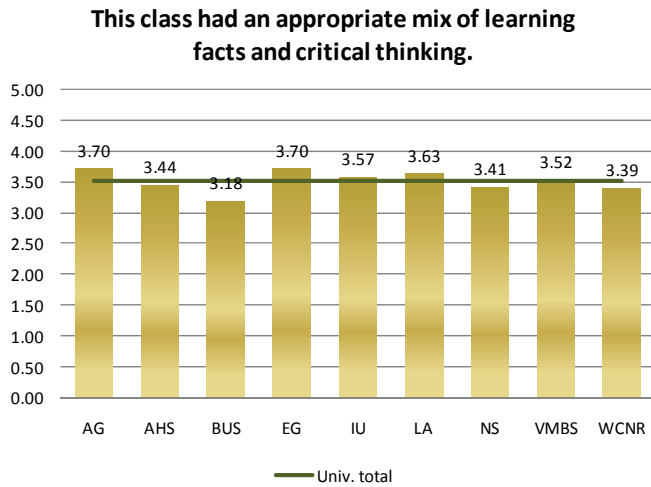
Chart 6.



Item 3: This class had an appropriate mix of learning facts and critical thinking.

With regard to the mix of factual learning and critical thinking, the courses in the colleges of Applied Human Sciences, Business, Natural Sciences and the Warner College of Natural Resources fell below the overall average. Courses in the colleges of Engineering and Agricultural Sciences had the highest average at 3.70 indicating the strongest mix. Although statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .010$ ).

Chart 7.

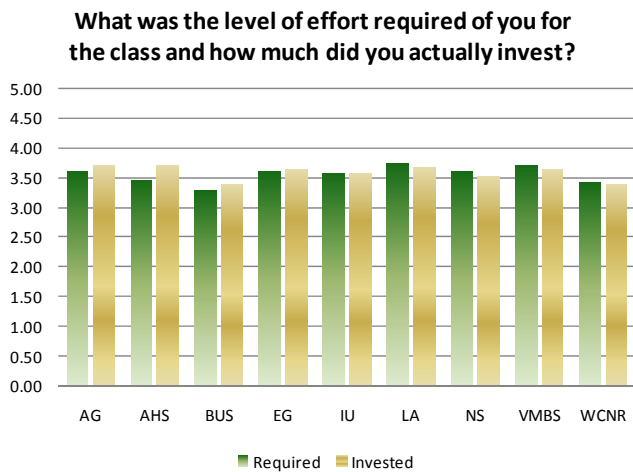


Item 4: What was the level of effort required of you for the class?

Item 5: How much effort did you actually invest in the class?

Overall, students reported investing in class the effort that was required. Again, although differences by college were statistically significant ( $p = .000$ ), the effect size for both items was very small ( $\eta^2 = .005$ ). However, in the colleges of Agricultural Sciences, Applied Human Sciences, Business, and Engineering the level of effort required in courses was lower than that which was invested.

Chart 8.

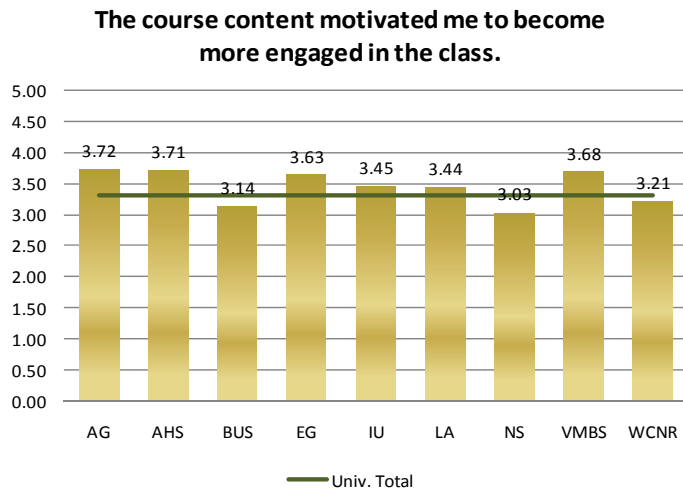




Item 6: The course content motivated me to become more engaged in the class.

Courses in the Warner College of Natural Resources and the colleges of Business and Natural Sciences scored below the average (3.31) with respect to motivating student engagement. The College of Veterinary and Biomedical Sciences courses scored the highest on this item. This item was highly correlated (.78) with students' overall satisfaction (item 7). Although statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .034$ ).

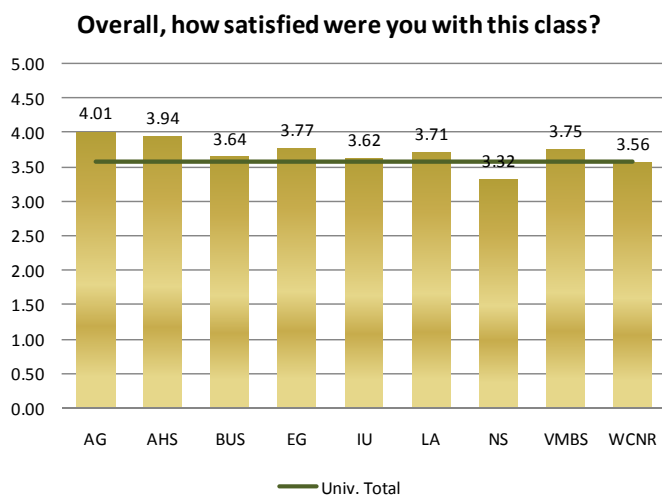
Chart 9.



Item 7: Overall, how satisfied were you with this class?

The average level of satisfaction was a 3.58. Generally speaking, students appeared to be satisfied with their courses. Students were the least satisfied with courses in the colleges of Natural Sciences and Business were the most satisfied with courses in the colleges of Applied Human Sciences and Agricultural Sciences. Although statistically significant ( $p = .000$ ), the effect size was small ( $\eta^2 = .031$ ).

Chart 10.



### Conclusions

The current study was developed as a follow-up to the NSSE survey and was intended to yield data specific to student engagement and satisfaction at the course level. The results were encouraging. Generally, second-semester freshmen self-reported being satisfied with their courses. There was some statistically significant variation within the data but the effect size for all variation was small or very small.

- Courses taught by faculty appeared to be more engaging than other courses
- Recitation courses seemed to be the least engaging
- The ten courses that scored in the bottom 10% in terms of overall engagement may require some focused attention to increase the level of student engagement
- Students reported being the most engaged in their lecture courses. This finding was echoed in the list of the top scoring courses (10 of the 11 courses were lectures)
- The average level of learning was slightly higher than the average level of challenge
- There was a positive correlation between engagement and satisfaction

The NSSE provides data regarding student engagement both in and out of the class room. The current survey provides a level of detail for class room engagement that is unavailable from the NSSE and therefore we may want to consider additional administrations in the years to come.

Please contact the Office of Institutional Research with any questions/comments.