

IOWA STATE UNIVERSITY COMPLETE REPORT OF FINDINGS NATIONAL SURVEY OF STUDENT ENGAGEMENT 2002

Prepared by
Kevin P. Saunders and Mary E. Huba
Office of Vice Provost for Undergraduate Programs
October 2003

The Survey

In Spring 2002, a sample of Iowa State University freshmen and seniors participated in the National Survey of Student Engagement (NSSE) by completing a web survey entitled, *The College Student Report*. (View survey at <www.iub.edu/~nsse>.) On the survey, students indicated how frequently they engage in behaviors that are highly correlated with many important learning and personal development outcomes of college. They also provided opinions about the institution they attend.

For the past three years, the NSSE project has surveyed undergraduates at four-year colleges and universities. It is cosponsored by The Carnegie Foundation for the Advancement of Teaching and The Pew Forum for Undergraduate Learning and was supported by a grant from The Pew Charitable Trusts through January 2003. The purpose is to provide an alternative to college rankings as a means of evaluating and improving institutions of higher education.

“There are two ways to think about student engagement. The first is a proxy for collegiate quality, reflecting the degree to which students take advantage of the learning opportunities their institution offers. The second is that student engagement is itself an important outcome of college” (2002 Annual Report, p. 8).

“The National Survey of Student Engagement (NSSE) is different in that NSSE is both an ongoing data collection effort and a strategy to improve undergraduate education. As a survey, NSSE annually gathers information directly from students about the extent to which they engage in sound educational practices. In this regard, the NSSE project documents and describes key dimensions of quality in undergraduate education. NSSE also aims to improve the college experience. Because the survey results point to things that an institution can do something about – almost immediately – NSSE data create an occasion for talking about and helping campuses focus on what matters to student learning” (2002 Annual Report, p. 8).

Methodology

The NSSE 2002 sample was comprised of 206,844 freshman and senior students who were randomly selected from electronic data files provided by the 366 participating four-year colleges and universities. An equal number of freshman and senior students was sent the survey with the standard sample size determined by the number of undergraduate students enrolled at the institution. At Iowa State, 1000 freshmen and 1000 seniors were

invited to participate. ISU opted to be a Web-only institution, i.e., all students completed *The College Student Report* on the Web.

The overall response rate for Iowa State students was 35% (39.1% for freshmen (n = 391) and 30.3% for seniors (n = 303)). The response rate for Doctoral/Research Extensive Universities was 36% and for all NSSE institutions was 41%.

Description of ISU Respondents

In terms of demographic characteristics, 52.5% of the ISU senior sample were male, and 87.5% were white. In the freshman sample, 44.6% were male, and 91% were white. In comparison to the 2001-2002 ISU undergraduate population in which 55.6% of undergraduates were male, and 87.7% were white (*ISU Fact Book 2001-2002*), the freshman sample was somewhat unrepresentative in terms of gender.

Ninety-eight percent (98.0%) of respondents were full-time students, a figure very similar to that in the ISU population (92.1%, *ISU Fact Book 2001-2002*). Among freshmen in the sample, 82.4% lived on campus, and among seniors, only 16.1% did so.

A variety of major fields was listed on the survey, and students were asked to check their major or expected major. Some of the categories corresponded to ISU colleges, namely, Agriculture, Business, Education, and Engineering. Most of the others described majors offered in ISU's College of Liberal Arts and Sciences, and a few were categories that included majors from more than one ISU college (e.g., visual and performing arts). Using these designations, enrollment in ISU colleges was estimated and compared with comparable figures in the *ISU Fact Book 2001-2002*, although given the categories on the survey, estimates were virtually impossible for the Colleges of Design and Family and Consumer Sciences. It did not appear that any one college was over-or under-represented in the data to a marked degree.

In summary, when compared to the ISU population of undergraduates in 2001-2002, the sample was generally representative with one exception: the freshman sample included an overrepresentation of females, but the senior sample did not. It is also useful to note the lower response rate for seniors (30.3%) compared to freshmen (39.1%).

Focus of This Report

NSSE provides institutions with benchmark scores, which are compilations of individual items that represent a common theme—level of academic challenge, active and collaborative learning, student interaction with faculty, enriching educational experiences, and supportive campus environment. An institution receives a benchmark score for each theme.

“The institutional benchmark score is the weighted arithmetic average (mean) of the corresponding survey items, calculated by dividing the sum of values for each

item by the total number of students responding to that item. Each benchmark was put on a 100-point scale” (NSSE 2002 Institutional Benchmark Report, p. 5).

For each benchmark, NSSE provides a histogram for freshmen and a histogram for seniors, showing how ISU compares to Doctoral/Research-Extensive institutions and to the national comparison group comprised of all participating institutions. Iowa State University has participated in the NSSE project since its inception. Therefore, ISU has benchmark information for the past three years. The report of results that follows provides an overview of the benchmark information from the past three years. The report is organized by benchmark themes, and the histograms for each benchmark are included in the discussion of the theme.

A second type of data provided by NSSE is means and frequency distributions for each item for freshmen and seniors separately. The NSSE data analysis includes statistical comparisons of ISU means and the means of both participating Doctoral/Research Extensive institutions and all participating institutions. The mean score comparison for individual survey questions associated with each benchmark theme are also presented in this report.

Results Related to Benchmark Themes

Level of Academic Challenge

Eleven items comprise the “Level of Academic Challenge” benchmark. On the first, students were asked how often during the current school year they had worked harder than they thought they could to meet an instructor’s standards or expectations. On the second, they were asked, “To what extent does your institution emphasize spending significant amounts of time studying and on academic work?” For four of the 11 items, students were asked the extent to which their coursework emphasized the following mental activities during the current school year— analyzing, synthesizing, making judgments, and applying.

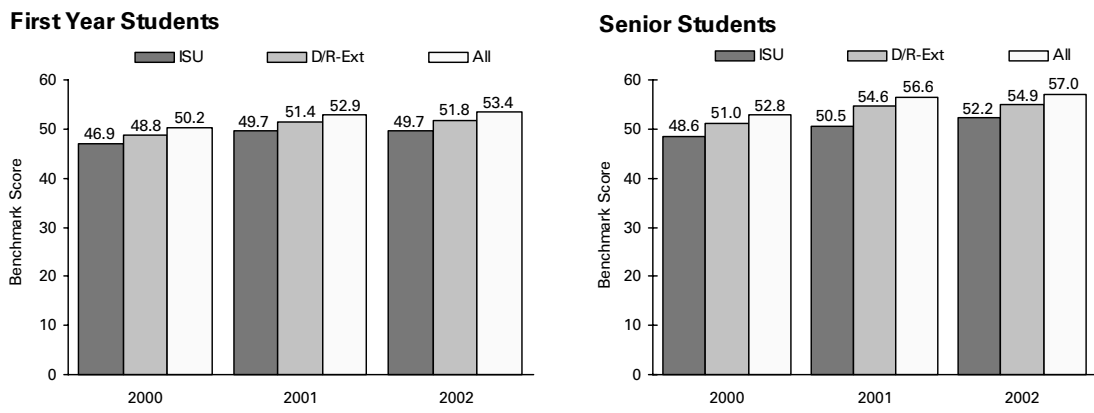
In an additional set of four items, students were asked about the amount of reading and writing they had done during the current school year. Students reported the number of textbooks, books, or book-length packs of course reading they were assigned. They also reported the number of papers or reports they had written that were fewer than five pages, between 5 and 19 pages, or 20 pages or more in length. The last item in the “Level of Academic Challenge” benchmark asked students to estimate the number of hours they spend in a typical seven-day week preparing for class (studying, reading, writing, rehearsing, and other activities related to their academic program).

Benchmark Comparisons

As seen in Figure 1, the benchmark score for both ISU freshmen and seniors increased over the course of the three survey years. Similarly, the benchmark scores for freshmen and seniors from both comparison groups (doctoral/research extensive and all participating institutions) increased during the same time period. The result of these two trends is that the “Level of Academic Challenge” benchmark scores for ISU freshmen and seniors are consistently below both comparison groups.

Figure 1

Level of Academic Challenge



Individual item comparisons provide information about areas in which ISU ratings were lower than those of comparison groups. Table 1 summarizes the mean comparisons for the eleven individual items comprising the “Level of Academic Challenge” benchmark for each of the survey years.

Table 1
ISU Mean Score Comparison for Individual Level of Academic Challenge Items 2000 - 2002

Benchmark Component Questions	Doctoral/Research - Extensive						All Participating Institutions					
	Freshman			Senior			Freshman			Senior		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Time spent preparing for class												
Number of assigned course readings	-			-			-			-		
Number of written papers > 20 pages												
Number of written papers 5 - 19 pages												
Number of written papers < 5 pages												
Coursework Emphasis												
Analysis												
Synthesis												
Making judgements												
Applying theories or concepts												
Worked harder to meet instructor's expectations												
Campus environment emphasizes studying and academic work												

As shown in Table 1, there is a tendency over time for ISU freshman and/or senior means to be statistically significantly *below* the mean of students in comparison groups for several individual items including:

- number of assigned course readings
- writing long papers
- taking courses that emphasize synthesis and making judgements
- working harder to meet instructor's expectations.

For three areas, there has never been a difference between ISU students and students in each comparison group:

- time spent preparing for class
- number of written papers less than 5 pages
- coursework emphasis on applying theories or concepts
- campus environment emphasizes studying and academic work.

As seen in Table 1, there are no items on which the ISU student means were *higher* than comparison group student means.

Active and Collaborative Learning

Seven items comprise the “Active and Collaborative Learning” benchmark. Students were asked, “In your experience at your institution during the current school year, about how often have you

- Asked questions or contributed to class discussions
- Made a class presentation
- Worked with other students on projects during class
- Worked with classmates outside of class on an assignment
- Tutored or taught another student
- Participated in a community-based project as part of a course
- Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)?

Students responded using the following scale: 1=Never; 2=Occasionally; 3=Often; 4=Very Often.

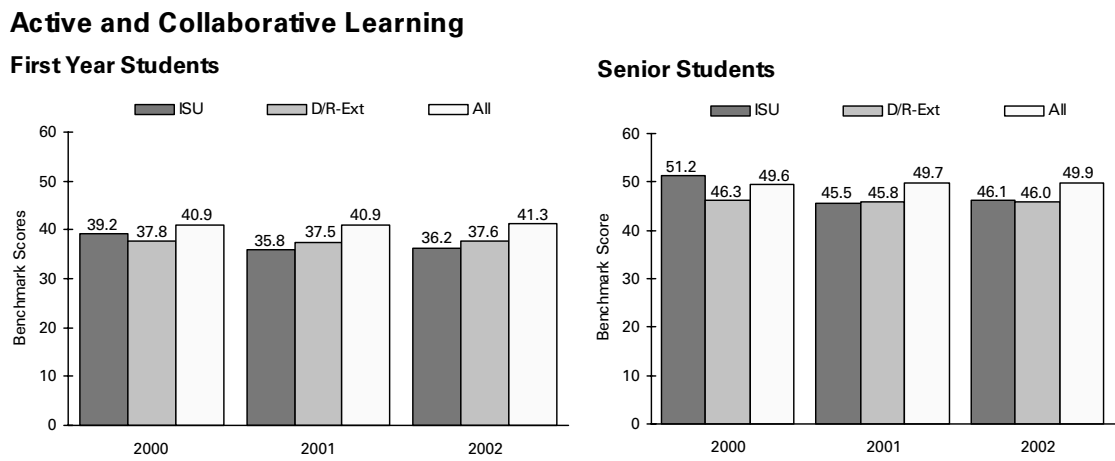
Benchmark Comparisons

As seen in Figure 2, the benchmark score for both ISU freshmen and seniors was highest in survey year 2000 and somewhat stable in 2001 and 2002. The higher means in 2000 are probably due to the fact that, in that year, both ISU freshman and senior samples included a greater percentage of engineering students (c. 34%) than the ISU population as a whole (21.03%, ISU Fact Book 1999-2000).

The benchmark scores for freshmen and seniors from both comparison groups (doctoral/research extensive and all participating institutions) were stable from 2000 to 2002.

Figure 2 shows that in years 2001 and 2002, the "Active and Collaborative Learning" benchmark scores for ISU freshmen and seniors are similar to doctoral/research extensive benchmark scores, but below the benchmark scores for all participating institutions.

Figure 2



Individual item comparisons in Table 2 provide information about areas in which ISU ratings were lower or higher than those of comparison groups.

Table 2
ISU Mean Score Comparison for Individual Active and Collaborative Learning Items 2000 - 2002

Benchmark Component Questions	Doctoral/Research - Extensive						All Participating Institutions					
	Freshman			Senior			Freshman			Senior		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Asked questions or contributed to class discussions	-	-					-	-	-		-	-
Made class presentation	-	-					-	-	-		-	-
Worked with other students on in-class project	+			+	+		+			+	+	
Worked with classmates on out-of-class assignment	+	+		+		+				+		+
Tutored another student												
Participated in a community-based project						-			-		-	-
Discussed course ideas outside class						-			-		-	-

As shown in Table 2, there is a tendency over time for ISU freshman and senior means for two individual items to be statistically significantly *above* the mean of students in comparison groups. The items are working with students on in-class projects and working with students on out-of-class assignments.

For the item "tutored another student," there has never been a difference between ISU students and students in each comparison group.

As seen in Table 2, there is a tendency over time for ISU means for several items to be *below* the means of students in comparison groups including:

- asking questions or contributing to class discussion
- making class presentations
- participating in community-based projects
- discussing course ideas outside of class.

Student Interactions with Faculty Members

Six items comprise the “Student Interactions with Faculty Members” benchmark. For five of them, students were asked, “In your experiences at your institution during the current school year, about how often have you

- discussed grades or assignments with an instructor
- talked about career plans with a faculty member or advisor
- discussed ideas from your readings or classes with faculty members outside of class
- worked with faculty members on activities other than coursework (committees, orientation, student-life activities, etc.)
- received prompt feedback from faculty on your academic performance (written or oral)?

Students responded using the following scale: 1=Never; 2=Occasionally; 3=Often; 4=Very Often.

Benchmark Comparisons

As seen in Figure 3, the ISU “Student Interactions with Faculty Members” benchmark scores for each of the three survey years were generally the same as or above the average benchmark score for the doctoral/research extensive institutions, but below the average benchmark score for all NSSE participating institutions.

Figure 3

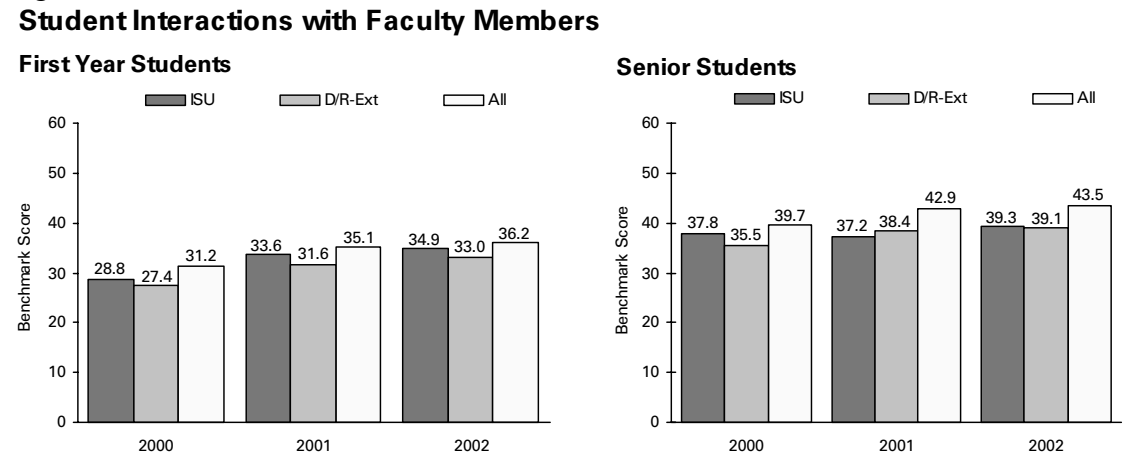


Table 3 summarizes the mean comparisons for the six individual items comprising the “Student Interactions with Faculty” benchmark for each of the survey years. As seen in the table, in at least one year, the ISU mean for freshman was statistically significantly *greater* than the mean of one or both comparison groups in the following areas:

- discussing career plans with faculty members or advisors
- working with faculty members on non-course activities
- working with faculty members on research projects.

As seen in Table 3, there was a tendency over time for the ISU mean on a few items to be *lower* than the mean of students from all participating institutions including: discussing grades or assignments with instructors and discussing course ideas outside of class with faculty members.

Table 3
ISU Mean Score Comparison for Individual Student Interactions with Faculty Members Items 2000 - 2002

Benchmark Component Questions	Doctoral/Research - Extensive						All Participating Institutions					
	Freshman			Senior			Freshman			Senior		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Discussed grades or assignments with instructor							-	-	-			
Discussed career plans with faculty member or advisor	+	+										-
Discussed course ideas outside class with faculty members							-	-			-	-
Worked with faculty members on non-course activities					+							
Received prompt feedback on academic performance									-		-	-
Worked with faculty members on research project ¹			+						+			

¹The 2002 institutional report provides a mean that represents the proportion of students responding "Yes." The proportions are then compared to the proportions of comparison groups. Similar analysis is not possible for earlier survey years.

Enriching Educational Experiences

The “Enriching Educational Experiences” benchmark is comprised of 11 items. On one item, students were asked, “To what extent does your institution encourage contact among students from different economic, social, and racial or ethnic backgrounds?” For three of the 10 items, students were asked, “In your experience at your institution during the current school year, about how often have you:

- had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values.
- had serious conversations with students of a different race or ethnicity than your own
- used an electronic technology (list-serv, chat group, Internet, etc.) to discuss or complete an assignment?

On one item, students were asked about how many hours a week they spent participating in co-curricular activities (organizations, campus publications, student government, social fraternity or sorority, intercollegiate or intramural sports, etc.). For the final six items, students were asked to indicate whether they had done or planned to do each of the following:

- practicum, internship, field experience, or clinical assignment
- community service or volunteer work
- foreign language coursework
- study abroad
- independent study or self-designated major
- culminating senior experience.

For survey years 2000 and 2001, statistical comparisons were not conducted for these items.

Figure 4

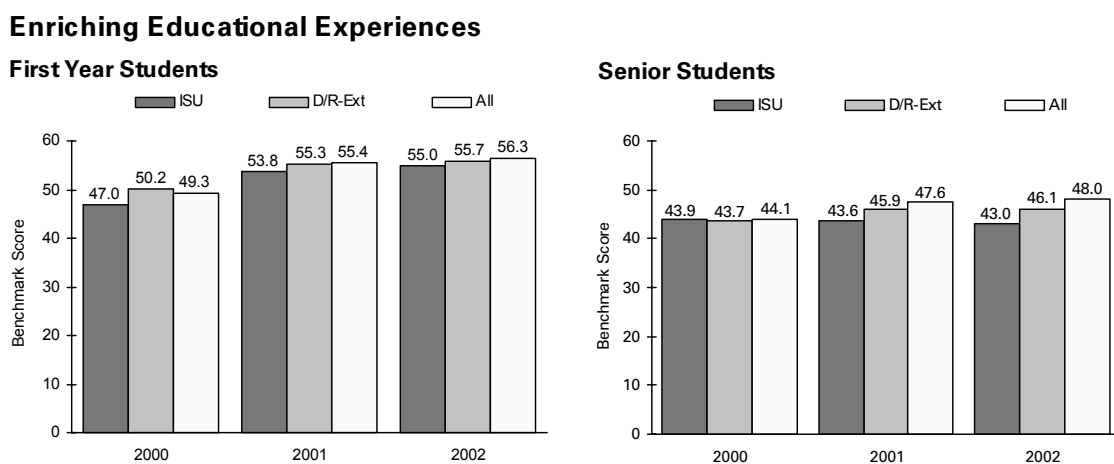


Figure 4 shows that for several survey years, the benchmark scores of ISU students were similar to the benchmark scores for both comparison groups. However, the benchmark

score for ISU seniors was below both comparison groups for survey years 2001 and 2002.

Table 4 summarizes the mean comparisons for the eleven individual items comprising the “Enriching Educational Experiences” benchmark for each of the survey years. The ISU mean is higher compared to both comparison groups in the areas of having or anticipating a practicum/internship/co-op experience (both groups) and studying abroad (freshman only).

As seen in Table 4, the ISU mean is lower compared to both comparison groups, specifically in the following areas:

- taking a foreign language course
- having a culminating senior experience
- having conversations with students of different race/ethnicity.

Table 4
ISU Mean Score Comparison for Individual Enriching Educational Experiences Items 2000 - 2002

Benchmark Component Questions	Doctoral/Research - Extensive						All Participating Institutions					
	Freshman			Senior			Freshman			Senior		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Participated in co-curricular activities ¹												
Practicum, internship or co-op experience ¹			+			+			+			+
Community service or volunteer work ¹												
Foreign language course ¹			-			-			-			-
Study abroad ¹			+						+			
Independent study ¹												
Culminating senior experience ¹			-			-			-			-
Serious conversations with student who have different beliefs, opinions, or values						-						
Serious conversations with students of different race/ethnicity	-	-	-			-	-					-
Used electronic medium to discuss or complete assignment										+		
Campus environment encourages contact with students from diverse backgrounds												-

¹The 2002 institutional report provides a mean that represents the proportion of students responding "Yes." The proportions are then compared to the proportions of comparison groups. Similar analysis is not possible for earlier survey years.

Supportive Campus Environment

The “Supportive Campus Environment” benchmark is comprised of six items. Three address the extent of institutional emphasis on providing the support needed to succeed academically, helping students cope with non-academic responsibilities (work, family, etc.), and providing the support needed to thrive socially (scale: 1=Very little, 2=Quite a bit, 3=some, 4=Very much).

The three other items addressed the quality of relationships with people at the institution, including students, faculty, and administrative personnel and offices. The response scale was a 1-7 scale where 1 and 7 were labeled as follows:

Students: (1) unfriendly, unsupportive, sense of alienation / (7) friendly, supportive, sense of belonging.

Faculty: (1) unavailable, unhelpful, unsympathetic / (7) available, helpful, sympathetic

Administrative Personnel and Offices: (1) unhelpful, inconsiderate, rigid / (7) helpful, considerate, flexible

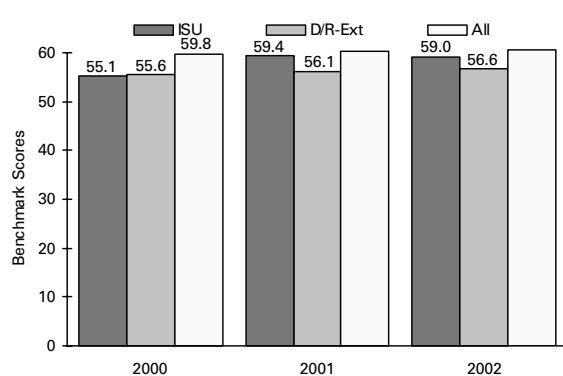
Benchmark Comparisons

Figure 5 shows that during the three survey years the ISU benchmark score was consistently at or above the benchmark score for doctoral/research extensive institutions, but below the benchmark score for all NSSE participating institutions.

Figure 5

Supportive Campus Environment

First Year Students



Senior Students

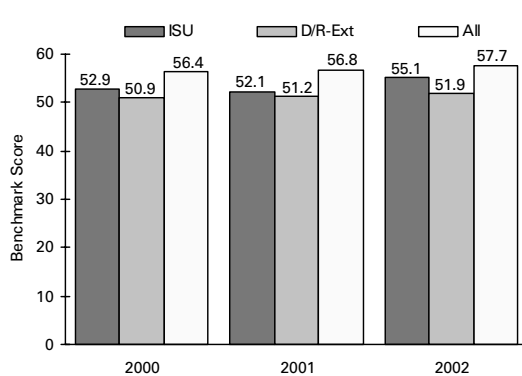


Table 5 summarizes the mean comparisons for the six individual items comprising the “Supportive Campus Environments” benchmark for each of the survey years. As seen in the table, compared to doctoral/research extensive institutions, ISU students had a *higher* mean score regarding the quality of relationships with administrators and offices. For two items, ISU students had a *lower* mean compared to the mean for all participating institutions, namely, providing support to succeed academically (seniors only) and the quality of relationships with faculty members (both freshman and seniors).

Table 5
ISU Mean Score Comparison for Individual Supportive Campus Environment Items 2000 - 2002

Benchmark Component Questions	Doctoral/Research - Extensive						Total					
	Freshman			Senior			Freshman			Senior		
	2000	2001	2002	2000	2001	2002	2000	2001	2002	2000	2001	2002
Campus environment provides support to succeed academically											-	-
Environment provides support for non-academic responsibilities												
Environment provides support for social development												
Quality of relationships with other students ¹												
Quality of relationships with faculty members ¹												
Quality of relationships with administrators and offices ¹												

¹Mean score comparison not available for survey year 2000

Summary

The following points summarize information from the NSSE 2000-2002 benchmarks.

- In general, ISU freshman and senior scores for each of the five benchmark themes have increased from 2000 to 2002.
- A similar trend of increasing benchmark scores can be seen for both benchmark comparison groups (i.e., doctoral/research extensive, all participating institutions).
- In general, compared to doctoral/research extensive institutions, ISU benchmark scores are:
 1. Higher in the areas of “Student Interactions with Faculty” and “Supportive Campus Environment,”
 2. Equivalent in “Active and Collaborative Learning,” and
 3. Lower in “Level of Academic Challenge,” and “Enriching Educational Experiences.”
- A review of the mean comparisons of individual items (Tables 1-5) may provide additional insights regarding areas of relative strength and potential improvement.