Cornell University

2001 CSEQ Intra-Institutional Analysis

Executive Summary and Extended Report

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I. Introduction

What do the following activities have in common?

- Asked a librarian for help finding information on a topic
- Gone back to read a basic reference referred to by other authors
- Developed a role play, case study or simulation for a class
- Prepared a major written report for class
- Took part in a group discussion with faculty outside of class
- Worked with a faculty member on a research project
- Socialized with a faculty member outside of class
- Participated in an art activity or theater production
- Talked with a faculty member or counselor about personal concerns

Answer: Based on the responses of Cornell freshmen and sophomores to the Spring 2001 administration of the College Students Experiences Questionnaire (CSEQ), less than one in five students had done any of these activities "often" or "very often."

In comparison, more than four in five lower-division students at Cornell had engaged in the following activities "often" or "very often:"

- Used e-mail to communicate with an instructor or students
- Used a computer to prepare papers
- Searched the Internet for course material
- Took detailed class notes
- Completed assigned readings for class
- Tried to see how different facts and ideas fit together
- Thought about grammar and style while writing
- Became acquainted with students of different social and economic backgrounds

II. About the CSEQ

A substantial body of research supports a positive linkage between the amount of time and effort students invest in using the learning resources and opportunities provided by their institutions and the outcomes of college (Astin, 1993; Davis & Murrell, 1993; Kuh, Pace & Vesper, 1997; Pascarella & Terenzini, 1991; Tinto, 1993). Simply put, the more actively students are engaged in their undergraduate experience, the greater the benefits they are likely to achieve. Consistent with this assertion, the College Student Experiences Questionnaire (CSEQ) measures the quality of students' college experiences inside and outside the classroom, their perceptions of the college environment, and estimated gains toward learning goals. It also collects information on students' background characteristics and enrollment status.

A. Survey Methodology and Response Rates

In conjunction with fifteen other highly selective private institutions, Cornell University administered the CSEQ in the Spring 2001 term. At Cornell, the entire freshman and sophomore classes (N = 6,491) were invited to respond to an on-line web-based format of the instrument. A total of 1,854 Cornell students submitted a complete survey for an overall response rate of 29%. Female students were more likely to respond to the survey than male students (33% versus 25%). Compared to students of other races/ethnicities, African-Americans and students who did not report their race were less likely to complete the survey. These response patterns varied somewhat across the seven undergraduate colleges.

B. Research Questions

This analysis of CSEQ data addressed four general research questions:

1. What do we know of students' background characteristics and general academic responsibilities?

2. How involved are students in various aspects of their educational experience at Cornell?

3. What are students' perceptions of Cornell?

4. How much do students think they have gained from their Cornell experience?

In addition to considering the average response of Cornell freshmen and sophomores as a whole, analyses examined whether and how the Cornell experience differed for students depending upon their gender, race, year of enrollment, and college affiliation.

In the next section, an executive summary provides a brief overview of survey results. Following that, more in-depth analyses of the research questions are presented. Detailed tables displaying analyses of survey items by student gender, race/ethnicity, class and college are contained in the appendix. The following abbreviations for undergraduate colleges are used in the report:

Agriculture and Life Sciences	ALS
Architecture, Art and Planning	AAP
Arts and Sciences	AS
Engineering	EN
Human Ecology	HE
Hotel Administration	HO
Industrial and Labor Relations	ILR

III. Executive Summary of 2001 CSEQ Findings

A. Research Question 1: Background Information

- On average, female students were more likely to respond to the survey than male students (33% response rate versus 25%), while African-American students (20%) and those who did not report their race (9%) had lower response rates than their peers of other races/ethnicities. Gender differences in response patterns were consistent across all colleges, but race differences were not. (Appendix Table 1 and Tables 2a through 2g)

- Almost three-quarters (74%) of respondents were living on campus. Compared to first-year students, a significantly greater proportion of sophomores lived off campus. White students and those enrolled in HE, HO and ILR were also more likely than others to report living off campus. (Appendix Table 3)

- Two-thirds (68%) of respondents reported that both parents had graduated from college. However, compared to Asian and white students, significantly more URM and international students reported that neither parent was a college graduate. (Appendix Table 4)

- Most students (83%) expected to enroll for an advanced degree after completing their undergraduate degree. White students were less likely than students of other races to report advanced degree aspirations. Likewise, AAP and HO students were less likely to expect to pursue a post-baccalaureate degree than students in other colleges. (Appendix Table 5)

- Most students reported taking 15 to 16 (39%) or 17 or more (38%) credit hours during the 2001 spring term. On average, males reported taking more credit hours than females. Among racial/ethnic groups, international and Asian students reported the heaviest credit hour loads while URM students reported the lightest. AAP and EN students were taking more credit hours than students in other colleges, particularly ALS and ILR. (Appendix Table 6)

- When asked to estimate how many hours a week they usually spent outside of class on academic activities (e.g., studying, writing, lab work), 35% of students reported 15 hours or less, 38% reported 16 to 25 hours, and 27% reported 26 or more hours. Compared to students of other races, URM students spent fewer hours per week on out-of-class academic work. Among colleges, AAP students reported the most hours of out-of-class work, followed by EN students; HO and ILR students reported spending the fewest hours on academic work outside of class. (Appendix Table 7)

- Approximately one-third (36%) of students held a paid on-campus job during the 2001 spring term. Of those who were employed on campus, most worked 10 or less hours per week. Female students were more likely to have a campus job and worked more hours than male students. URM students worked on campus for more hours than students of other races. More freshmen than sophomores had campus jobs. ALS and HO students worked the most hours at a campus job while AAP and EN students worked the fewest. (Appendix Table 8) Less than one out of ten (7%) students had an off-campus job. URM students and sophomores were slightly more likely to have off-campus employment than their respective peers. (Appendix Table 9) Of students who were employed, either on- or off-campus, the majority reported their job either did not interfere or took some time away from their school work. (Appendix Table 10)

B. RESEARCH QUESTION 2: INVOLVEMENT IN COLLEGE ACTIVITIES

1. Overview of College Activity Scales

In the CSEQ, students were asked to report their frequency of involvement in thirteen categories of activities. Each category functions as a scale and is comprised of a number of specific activities (ranging from 5 to 11 per scale) ordered from relatively simple to increasingly complex. Using the current school year as the context, students reported whether they engaged in each activity "very often," "often," "occasionally," or "never."

- Based on the proportion of students reporting "very often" or "often," Cornell freshman and sophomore students were most engaged in course learning experiences, developing acquaintances with other students, using computer and information technology, and activities associated with personal development. They were least involved in clubs and organizations, interactions with faculty, using campus library resources, and participating in art, music and theater activities.

- There was generally a negative relationship between the complexity of activities and frequency of student engagement.

- The nature of students' involvement varied most with the undergraduate college in which they were enrolled. College differences were largest for curriculum-associated activities such as computer usage, and science and quantitative experiences.

- Gender and race were the next most important covariates of students' college experiences. These differences were moderated when college affiliation was taken into account, and were not consistent across colleges.

- The reported experiences of freshmen were seldom significantly different from those of sophomores.

2. Library Use (Appendix Tables 11a through 11h)

- Students had most often used a database to find material in the library; they were least likely to have gone back to read a basic reference referred to by other authors, or to have asked a librarian for help in finding information on a topic.

- There were significant differences by college on all library use scale items. Library resources were used most frequently by AAP and ILR students, and least frequently by EN and HO students.

3. Computer and Information Technology (Appendix Tables 12a through 12i)

- Almost all students had very often used a computer to prepare reports or papers, and used e-mail to communicate with an instructor or other students. Most had often searched the Internet for material related to a course. Students had least often used a computer to retrieve off-campus library materials, or to develop a Web page or multimedia presentation.

- There were statistically significant differences across colleges on all but one computer and information technology scale item. HO students reported the most frequent experiences using computers and information technology, followed by ILR and EN students.

4. Course Learning Activities (Appendix Tables 13a through 13k)

- Among course learning activities, students had most often taken detailed class notes and completed assigned readings. They had least often developed a case study for class.

- Among race groups, white students were the most involved in course learning activities, followed closely by URM students. Asian student reported the least frequent involvement of all race groups.

5. Writing Experiences (Appendix Tables 14a through 14g)

- More than four-fifths of students had often or very often thought about grammar, sentence structure, word choice, and sequence of ideas as they were writing, but less than one-third had referred to a book or manual about writing style or grammar. Students infrequently prepared major reports (20 pages or more) for class.

- Writing experiences differed significantly by students' class level. Freshmen were more likely than sophomores to use a variety of resources (dictionaries, style manuals, revisions, and advice from faculty) to improve their writing. Sophomores had more often prepared major reports for class.

6. Experiences with Faculty (Appendix Tables 15a through 15j)

- Students had most frequently asked their instructor for information about a course (e.g., grades, assignments), and had worked harder as a result of feedback received from an instructor. They were least likely to have socialized with a faculty member outside of class, or worked with a faculty member on a research project.

- The largest variation in students' involvement with faculty was associated with college affiliation. Overall, AAP students reported the most frequent involvement with faculty members, followed by students in HO and ILR; EN students reported the lowest frequency of involvement.

7. Art, Music and Theater Experiences (Appendix Tables 16a through 16g)

- Students had most often talked about music with other students, friends, or family members, and had least often participated in art or theater events. They were more likely to talk about or view the arts than to directly participate in them.

- College affiliation was associated with the largest differences in students' art experiences. With the exception of participating in a musical activity, AAP students had markedly greater involvement in art, music or theater activities than their peers in other colleges.

8. Campus Facilities (Appendix Tables 17a through 17h)

- Students had most frequently used campus facilities for recreational purposes (e.g., pool, fitness equipment, courts) or to meet other students for discussions (e.g., campus center). They had least often used a campus learning lab or center to improve their study or academic skills.

- There were significant differences in student use of campus facilities by race. International students made the greatest use of campus facilities. White students were least likely to have attended a social

or cultural event, or a lecture or panel discussion; they were more likely than students of other races to have used campus recreational facilities, played a team sport, or exercised regularly.

9. Clubs and Organizations (Appendix Tables 18a through 18e)

- Almost half of students had often or very often attended a meeting of a campus club, organization, or student group. Students had least often met with a faculty member or staff advisor to discuss the activities of a group or organization. Students were more likely to be involved in on-campus than off-campus committees or organizations.

- Compared to students of other races, URM students tended to be most involved in clubs and organizations, followed by Asian students. International students were least involved.

10. Personal Experiences (Appendix Tables 19a through 19h)

- Students were most likely to have talked with friends or family members about their reactions to other people, or why some people do not get along. They were least likely to talk with faculty or staff members about personal concerns.

- The largest differences in students' personal experiences were between female and male students. Female students were significantly more likely than male students to have had discussions of personal concerns with friends or family, and to have engaged in personal development activities.

11. Student Acquaintances (Appendix Tables 20a through 20j)

- On the whole, students were more likely to have become acquainted than to have had serious discussions with students whose attributes, backgrounds or beliefs differed from their own. More than three-quarters of students had often or very often met students whose interests, socioeconomic backgrounds, or race differed from theirs. Less than half of students had frequently discussed serious topics with students from other countries.

- The largest variances in student interactions were associated with race. Depending on the specific item, international, URM and white students variously had significantly more frequent interactions with diverse peers than students from other race groups. On all but one interaction measure, Asian students had significantly less peer involvement than one or more of the other race groups.

12. Scientific and Quantitative Experiences (Appendix Tables 21a through 21j)

- Students were most likely to have memorized formulas, definitions, or technical terms and concepts, and least likely to have compared the scientific method with other methods for gaining knowledge and understanding.

- Males had more frequent scientific and quantitative experiences than female students. Gender differences were largest for using mathematical terms to express relationships, explaining science or math concepts to others, and reading articles about science or math.

13. Topics of Conversation (Appendix Tables 22a through 22j)

- In students' conversations outside the classroom, the arts were the most frequent topic, followed by different lifestyles, customs, and religions, and current events in the news. Students were least likely to have talked about the ideas and views of writers, philosophers, and historians.

- Except for the topic of computers and other technologies, Asian students were generally less involved in out-of-class conversations than students of other races. International students were more likely to talk about current events, science, computers, and international relations. URM students were more likely to talk about social issues, the ideas of others, and the arts.

14. Information in Conversations (Appendix Tables 23a through 23f)

- In their conversations outside the classroom, students were most likely to refer to knowledge they had acquired in their readings or classes. They were least likely to change their opinions as a result of arguments presented by others.

- On average, Asian students were less likely than students of other races to refer to knowledge acquired from readings, classes or their professors, or to subsequently read something related to the topic of conversation. International students were more likely to read further on conversation topics and to persuade others to change their minds. URM students were more likely to refer to their professors' statements in conversations.

C. RESEARCH QUESTION 3: PERCEPTIONS OF CORNELL

1. Opinions About Cornell (Appendix Tables 24 and 25)

- Students had very positive opinions about Cornell. Almost half (46%) were enthusiastic about Cornell, and two-fifths (39%) said they liked it. Female students were more enthusiastic about Cornell than male students; white and international students were more enthusiastic than Asian and URM students; and freshmen were more enthusiastic than sophomores.

- Asked if they would attend Cornell if they could start over again, almost half (47%) of students said they would definitely do so and 40% said they would probably do so. Female students were more likely than male students to say they would choose Cornell again; white and URM students were more likely to choose Cornell again than Asian and international students; and freshmen were more likely than sophomores to say they would choose Cornell again.

2. Student Development Emphases (Appendix Tables 26a and 26b)

- Students perceived that Cornell placed the strongest emphasis on developing students' scholarly and analytical skills, and the weakest emphasis on developing aesthetic qualities, vocational and occupational competence, and the personal relevance and practical value of courses.

- There were statistically significant differences by race on all seven measures of institutional emphasis. Compared to students of other races, Asian students perceived a weaker emphasis on developing scholarly and analytical qualities; URM students perceived a weaker emphasis on

appreciating human diversity; and international students perceived a stronger emphasis on the remaining four developmental measures.

- Regardless of college, all students perceived scholarly qualities as the most strongly emphasized developmental aspect, and appreciation of human diversity as a moderately strong institutional emphasis. There were significant differences by college in the perceived emphasis on the other developmental measures.

3. Quality of Relationships (Appendix Tables 27a and 27b)

Students used three 7-point scales, each with descriptive labels for the anchor points, to rate how positive or negative their relationships were with other students, faculty members, and administrative personnel and services.

- The anchor points for the "relationships with other students" scale were: 1 = competitive, uninvolved, sense of alienation; and 7 = friendly, supportive, sense of belonging. Cornell students rated their relationships with fellow students very positively (mean score of 5.5). Females rated their relationships with other students more positively than males. International students were significantly more positive in their ratings of relationships with other students than URM students. Among colleges, HO students rated their relationships with fellow students most positively, while students enrolled in AS, EN and ALS gave slightly less positive ratings.

- The anchor points for the "relationships with faculty members" scale were: 1 = remote, discouraging, unsympathetic; and 7 = approachable, helpful, understanding, encouraging. Students were also generally positive about their relationships with faculty members (mean score of 5.1). Differences by gender, race, and college were larger than those associated with ratings of student relationships. Females were more positive in their ratings of relationships with faculty members than males. International students gave the most positive rating of faculty relationships, while Asian and white students gave significantly less positive ratings. HO students rated their relationships with faculty more positively than students enrolled in other colleges.

- The anchor points for the "relationships with administrative personnel and offices" scale were: 1 = rigid, impersonal, bound by regulations; and 7 = helpful, considerate, flexible. Students' ratings of their relationships with administrative staff were less positive than those given for relationships with other students and faculty members. Still, more than half (mean score of 4.5) rated their relationships with administrators positively. Female students gave more positive ratings to their relationships with administrators than male students. International and URM students gave significantly more positive ratings to administrative relationships than Asian and white students. HO and HE students gave more positive ratings to their relationships with administrative staff than students in other colleges.

D. Research Question 4: Estimated Gains From Cornell Experience

Students were asked to estimate the gains they had made in 25 areas of skills and knowledge since starting college. Students used the following response scale to indicate their gains in each area: 1 = very little, 2 = some, 3 = quite a bit, and 4 = very much. (Appendix Tables 28a through 28y)

- On average, students reported their greatest gains in areas of higher-order cognitive development (e.g., their ability to think analytically and logically, synthesize information, and learn independently) and in self-development (e.g., their ability to understand themselves, adapt to change, and get along with different kinds of people). The weakest areas of development were related to the arts and

humanities (e.g., developing an understanding and enjoyment of art, music, and drama; and broadening their acquaintance with and enjoyment of literature).

- Female students identified greater gains than male students in areas of arts and humanities (e.g., appreciation of literature, awareness of philosophical diversity), and self-development (e.g., understanding self, getting along with others, working on teams, and adapting to change). Conversely, male students identified making more progress in their analytical abilities, and in areas related to quantitative reasoning, science and technology.

- For the majority of the skills and knowledge areas considered (16 out of 25), there were not significant differences in the gains estimated by students of different races. Compared to students of other races, Asian students reported less improvement in their vocational preparation, preparation for further education, general education, appreciation of literature, writing and speaking skills, and values clarification. International students reported greater improvement in their acquisition of a broad general education, writing skills, awareness of philosophical diversity, and quantitative analysis skills.

- Across colleges, students did not differ significantly in their estimates of gains in several aspects of self-development (clarifying values, understanding self, getting along with others), their ability to synthesize information, and to pursue learning on their own. There were significant differences by college in the other skills and knowledge areas; these differences were consistent with curricular emphases. For example, EN and ALS students reported the greatest gains in areas related to science and technology. AAP and AS students reported the most improvement in areas related to the arts and humanities. HO and ILR students estimated the greatest gains in speaking, writing and teamwork skills.

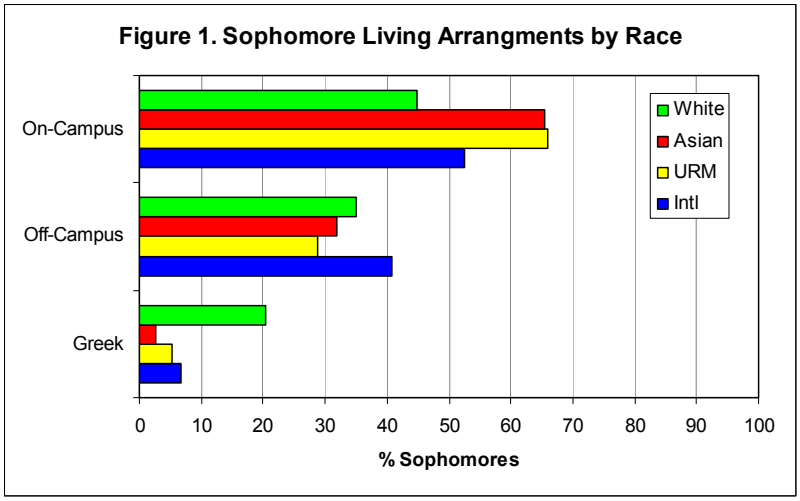
IV. Detailed Analyses of Selected 2001 CSEQ Findings

A. Research Question 1: Background Information

The CSEQ asked students about their current living arrangements, parental education, advanced degree expectations, and number of hours spent per week on academic activities and hours of paid employment. These are factors that may affect students' predilections, time and energy for various forms of involvement at Cornell.

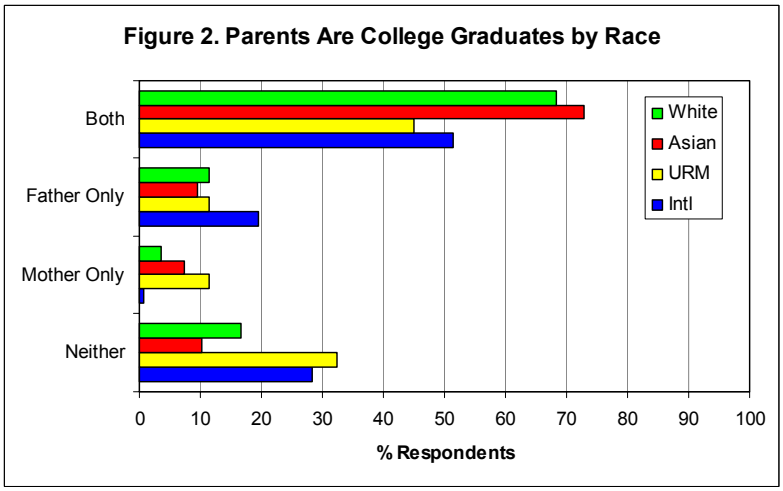
1. Living Arrangements

Almost three-quarters of respondents lived in campus housing but there were significant variations in housing choice, most pronounced between freshmen and sophomores. Virtually all freshman respondents (98%) lived in campus housing compared to roughly half (52%) of sophomore respondents. There were also significant differences in the living arrangements of sophomores by race/ethnicity. As shown in Figure 1, Asian and under-represented minority (URM) sophomores were more likely to live in campus housing than their international and white peers. Living in a fraternity or sorority was more often the choice of white sophomores.



2. Parents' Education

Two-thirds (68%) of all respondents reported both parents are college graduates, while only 15% reported neither parent had a college degree. This pattern was consistent across gender, class and colleges but there were significant differences in parental education reported by students of different races.



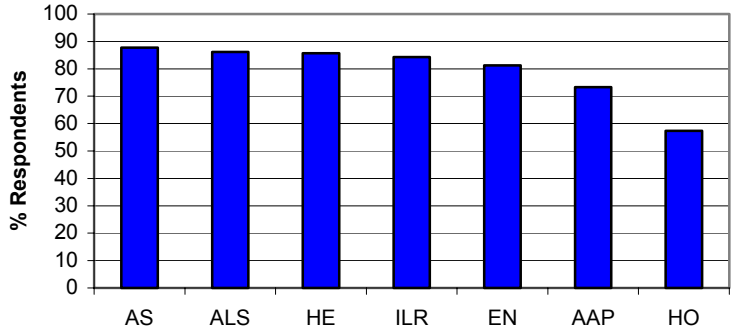
As displayed in Figure 2, white and Asian respondents reported the highest levels of parental education while URM and international students reported the lowest. One-third (32%) of URM students are first-generation college students, compared to 28% of international, 17% of Asian and 10% of white survey respondents. Conversely,

almost three-quarters of white students reported both parents are college graduates, compared to less than half (45%) of URM students.

3. Advanced Degree Expectations

The majority (83%) of students expected to enroll for an advanced degree after completing their undergraduate degree. A significantly smaller percentage of white respondents (81%) reported such intent compared to their peers of other races/ethnicities (86% to 89%). However, the largest differences in advanced degree aspirations were observed across colleges. Figure 3 presents advanced degree expectations by undergraduate college. Students enrolled in AAP and HO were significantly less likely to report advanced degree intentions than their peers enrolled in the other undergraduate colleges.

Figure 3. Expect to Enroll for More Advanced Degree by College



4. Academic Activity: Credit Hours and Out of Class Work

Two broad measures of students' academic responsibilities are the number of credit hours taken and the amount of time spent on academic work outside the classroom. On average, approximately one-quarter of survey respondents reported taking 14 or fewer credit hours during the Spring 2001 term, while almost two-fifths reported taking 17 or more. However, as Table 1 shows, the number of credit hours taken varied significantly by students' undergraduate college and race/ethnicity affiliation. The largest differences were in the percentage of students taking 17 or more credit hours per week.

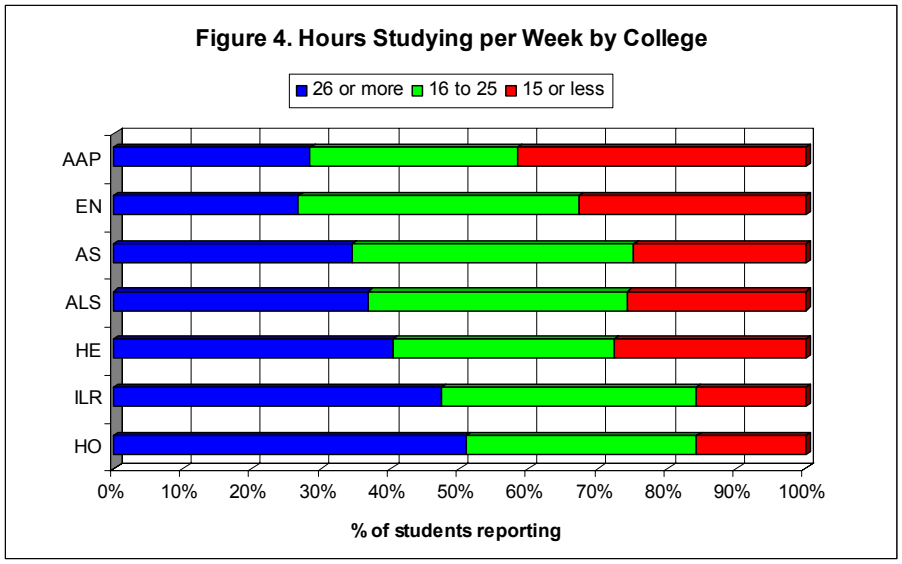
Table 1. Number of Credit Hours Taken

	% Reporting		
	14 or less	**15 to 16**	**17 or more**
By College* **			
EN	10.9	33.0	56.1
AAP	30.0	16.7	53.3
AS	22.7	40.0	37.3
HO	26.0	41.7	32.3
HE	30.4	42.0	27.6
ALS	35.8	42.7	21.5
ILR	31.6	47.4	21.1
By Race/Ethnicity* **			
International	15.1	18.7	66.2
Asian	19.1	34.6	46.3
White	24.7	41.8	33.5
URM	35.7	42.3	22.0

*** $p < .001$

Across the undergraduate colleges, EN and AAP students reported the heaviest academic course loads, while those enrolled in ALS and ILR reported the lightest. International students were carrying the most credit hours; fully two-thirds reported taking 17 or more hours per week. URM students had the fewest hours; less than one-quarter took more than 16 hours. This general pattern of race differences in academic course load existed within each of the colleges except HE and AAP.

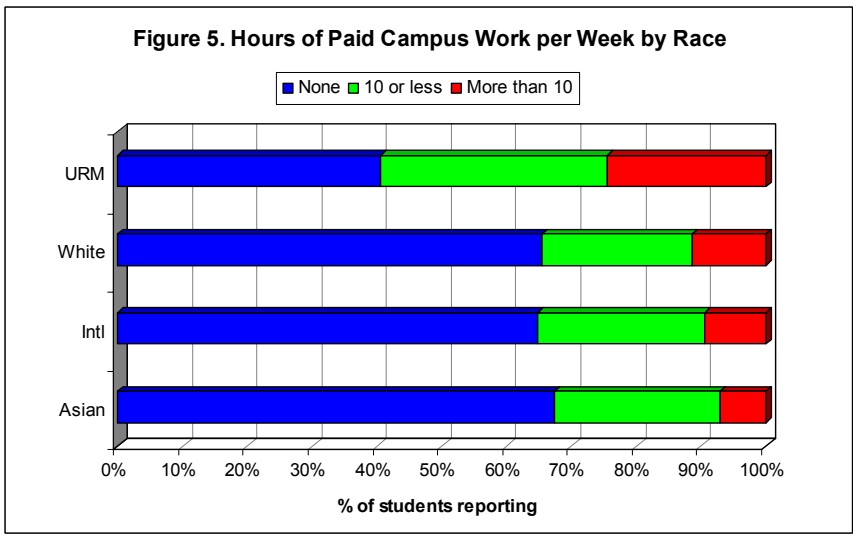
As might be expected, there were similar patterns in the number of hours per week students reported spending on out of class academic work such as studying, reading and lab work. The largest differences in the hours of studying were observed across colleges. As Figure 4 shows, AAP and EN had the largest percentage of students who spent 26 or more hours weekly on out of class academic tasks. HO and ILR had the smallest percentage of students in this category. Significant gender and race differences were also apparent but these were not as pronounced or consistent as the differences among colleges.



5. Paid Employment

Asked to report the number of hours per week they worked on campus for pay, nearly two-thirds (64%) of survey respondents said they did not have an on-campus job, one-quarter (25%) worked ten or less hours per work, and 12% worked more than ten hours per week. Differences in campus employment were observed among groups of respondents: females worked more hours than males; sophomores worked more hours than freshmen; HO students worked the most hours per week while AAP and EN students worked the fewest hours. The largest variations were reported among students of different races.

Figure 5 shows that URM students were significantly more likely to have a paid campus job, and to work more hours at it per week, than their non-URM peers. On average, one-third of URM students worked ten or fewer hours per week, and one-quarter worked more than ten. This pattern of more hours of campus employment among URM students was observed within all colleges except EN.



Off-campus paid employment was reported by less than ten percent of respondents. Of the students who had either on- or off-campus employment (40% of respondents), most reported their employment either did not interfere with their school work (40%) or took some time from it (55%).

B. RESEARCH QUESTION 2: INVOLVEMENT IN COLLEGE ACTIVITIES

As the name of the instrument implies, a major focus of the CSEQ is to examine the nature of students' involvement in their college education. The instrument includes 13 College Activity scales that measure the quality of effort students have invested in using institutional resources (e.g., classrooms, libraries, arts facilities, science and technology facilities, recreational facilities, and residences) and opportunities for association on campus (e.g., contact with faculty and involvement in clubs). Each scale consists of a number of activities (ranging from 5 to 11 per scale) ordered from relatively simple to increasingly complex. For example, items in the course learning scale begin with "completed the assigned readings for class" and end with "worked on a paper or project where you had to integrate ideas from various sources." Quality of effort is measured by how often students engaged in each of the activities during the current school year. Response options are: very often, often, occasionally and never.

Table 1 distinguishes the types of college activities Cornell students engaged in more often and less often. The basic distinction between "more" and "less" is based on whether 50% or more of respondents had done 50% or more of the activity scale items "often" or "very often." Within these two categories, scales are ordered from highest to lowest levels of student engagement based on the mean percentage of students doing scale activities "often" or "very often."

Table 1. College Activities Engaged in More and Less Often

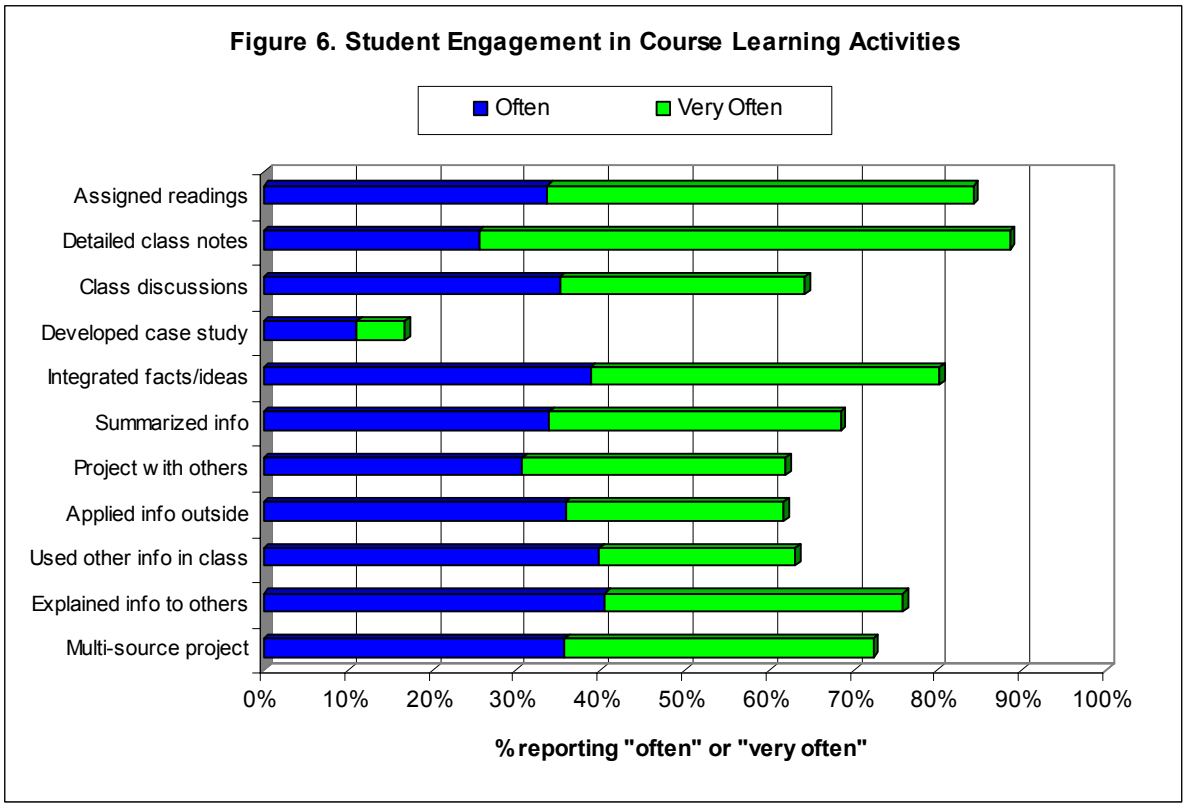
More Often	Less Often
Course learning experiences	Information in conversations
Student acquaintances	Topics of conversation
Use of computer and info technology	Scientific/quantitative experiences
Personal experiences	Writing experiences
	Campus facilities
	Art, music and theater experiences
	Library experiences
	Experiences with faculty
	Clubs and organizations

On the whole, students were quite actively involved in the learning process, applying a broad range of learning methods. They frequently interacted with students whose backgrounds and cultures are different from their own, and used a variety of avenues for self-development. They less often participated in intellectual discussions (e.g., of social and scientific issues) outside the classroom, or developed their skills in scientific and quantitative reasoning, and writing. They made comparatively less use of recreational, arts, and library facilities or clubs and organizations, and they had limited personal interactions with faculty.

These summary measures offer an overall picture of students' involvement in their Cornell experience, but they also obscure important distinctions. Appendix tables showing analysis results for separate items on the College Activity scales by gender, race, class and college reveal several patterns. There is generally a negative relationship between the complexity of scale activities and the frequency of student engagement. That is, students tended to do more of the simpler activities on each scale, and less of the more complex activities. Significant group differences in student activities are also evident. The nature of students' involvement at Cornell varies primarily with the undergraduate college in which they are enrolled. On eight of the thirteen activity scales, the most frequent and largest differences in students' responses were associated with their college affiliation. College differences were most pronounced for curriculum-associated activities, such as computer usage, science and quantitative experiences, and topics of conversation. Gender and race were the next most important covariates of students' involvement. However, the number of significant gender and race differences declined when college affiliation was taken into consideration. Finally, students' class level – being a freshman versus a sophomore – is associated with comparatively few significant differences in involvement. The reader is encouraged to examine the appendix tables for more detailed information. This summary highlights results for three of the thirteen activity scales: course learning, experiences with faculty, and student interactions.

1. Course Learning Activities

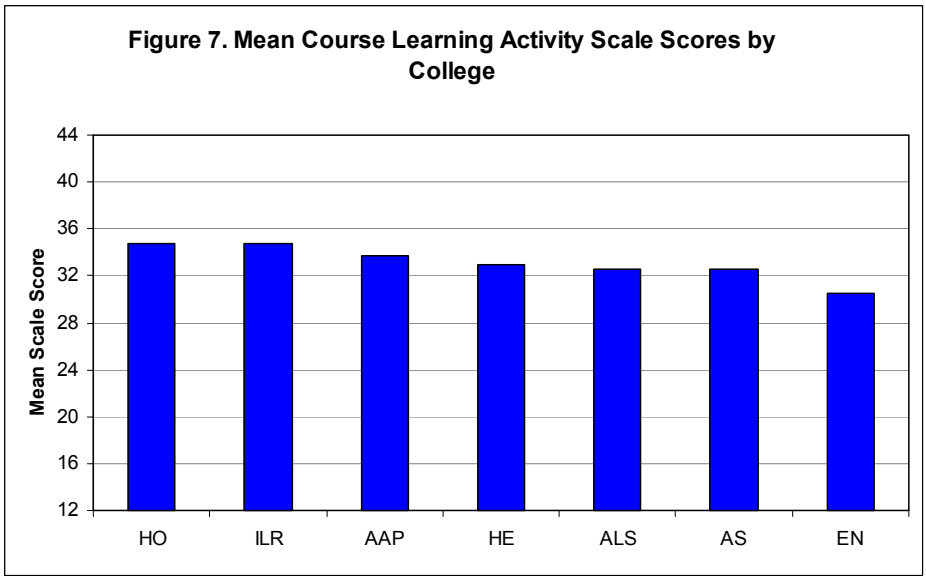
Students indicated how frequently they engaged in 11 course learning activities – ranging from relatively simple activities such as completing class readings and taking detailed notes during class, to more complex activities such as explaining course material to someone else, and integrating ideas from various sources for a paper or project. Figure 6 shows the percentage of students doing each of these activities "often" and "very often." Learning activities are arranged from the least complex (assigned readings) to most complex (working on multi-source projects).



With the exception of developing a case study or role play for class, students had a generally high level of engagement in course learning activities. In contrast with the pattern observed in other activity scales, there was not a linear relationship between learning activity complexity and student engagement. Large proportions of student had been involved in both the simplest and the most complex activities on this scale. However, student engagement in learning activities differed significantly by college, by gender, and, to a lesser extent, by race.

a. Course Learning Activities by College

The undergraduate colleges appear to provide quite distinctive course learning environments for students. Figure 7 shows mean scores for the course learning activity scale for each college. Possible scale values range from a minimum of 11 (equivalent to all students reporting "never" on all scale activities) to a maximum of 44 (equivalent to all students reporting "very often" on all scale activities). Students enrolled in HO and ILR had the highest mean scale score while those enrolled in EN had the lowest.



There were also statistically significant differences across colleges in the extent of student involvement for each of the course learning activities comprising this scale. Table 2 (below) displays the mean scores for each course learning activity by college.

Table 2. Mean Scores of Course Learning Activities by College

	HO	ILR	AAP	HE	ALS	AS	EN
Assigned readings***	3.1	3.3	3.3	3.4	3.3	3.5	3.2
Detailed class notes***	3.6	3.8	3.4	3.7	3.5	3.6	3.3
Class discussions***	3.0	3.2	2.9	2.8	2.9	3.0	2.6
Developed case study***	2.1	2.0	1.8	1.8	1.7	1.6	1.6
Integrated facts/ideas***	3.1	3.3	3.3	3.1	3.2	3.3	3.1
Summarized info***	3.1	3.2	3.1	3.1	3.0	3.0	2.7
Project with others***	3.7	3.5	2.9	2.9	2.8	2.6	3.1
Applied info outside***	3.2	3.0	3.1	3.0	2.8	2.9	2.6
Used other info in class***	3.2	3.0	3.0	2.8	2.9	2.8	2.6
Explained info to others**	3.2	3.2	3.3	3.2	3.1	3.1	3.0
Multi-source project***	3.3	3.3	3.5	3.1	3.2	3.0	2.8

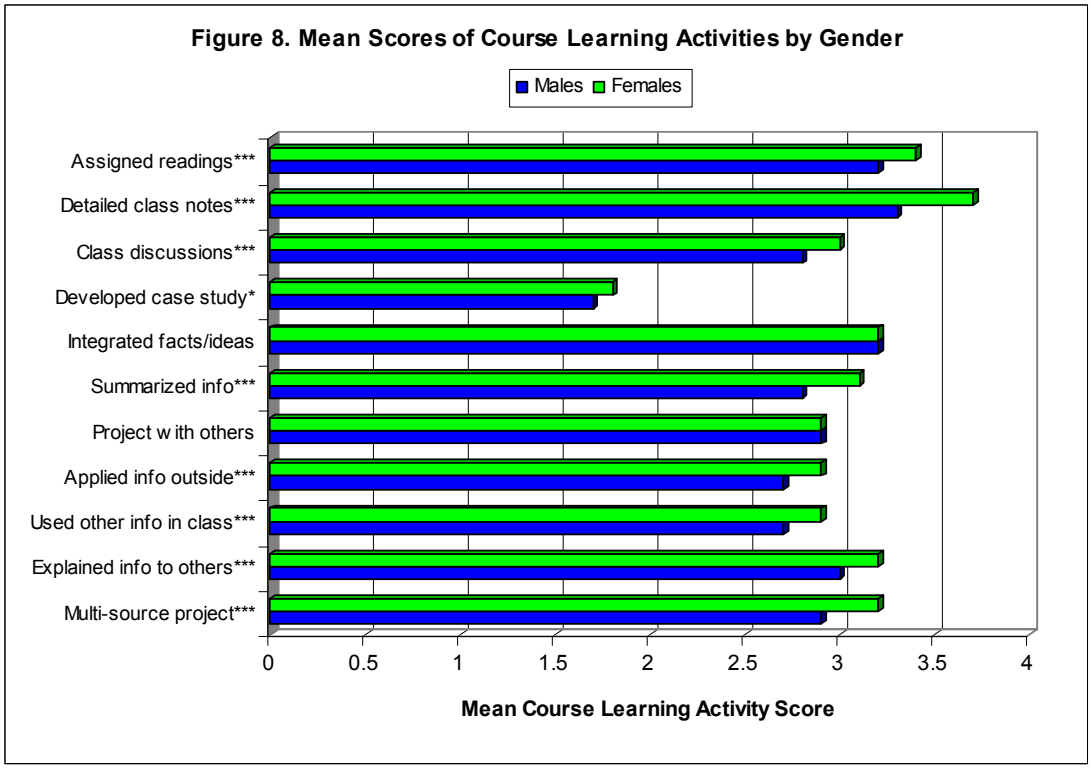
Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each course learning activity. Mean scores are based on a response scale of: 1 = never; 2 = occasionally; 3 = often; and 4 = very often.
** $p < .01$, *** $p < .001$

As was noted earlier, students in all colleges had seldom developed role plays and case studies. Students enrolled in HO, ILR and AAP had comparatively high levels of involvement across all other learning activities. ALS and HE students had greater involvement in less cognitively complex learning activities such as completing assigned readings, taking detailed notes and participating in class discussions, but less involvement in more complex and applied learning activities. The same general pattern was observed for EN students with one exception; these students quite often worked on group assignments or projects. These differences in learning activity engagement by college are likely a function of associated differences in total enrollments and class size, and disciplinary differences in epistemologies.

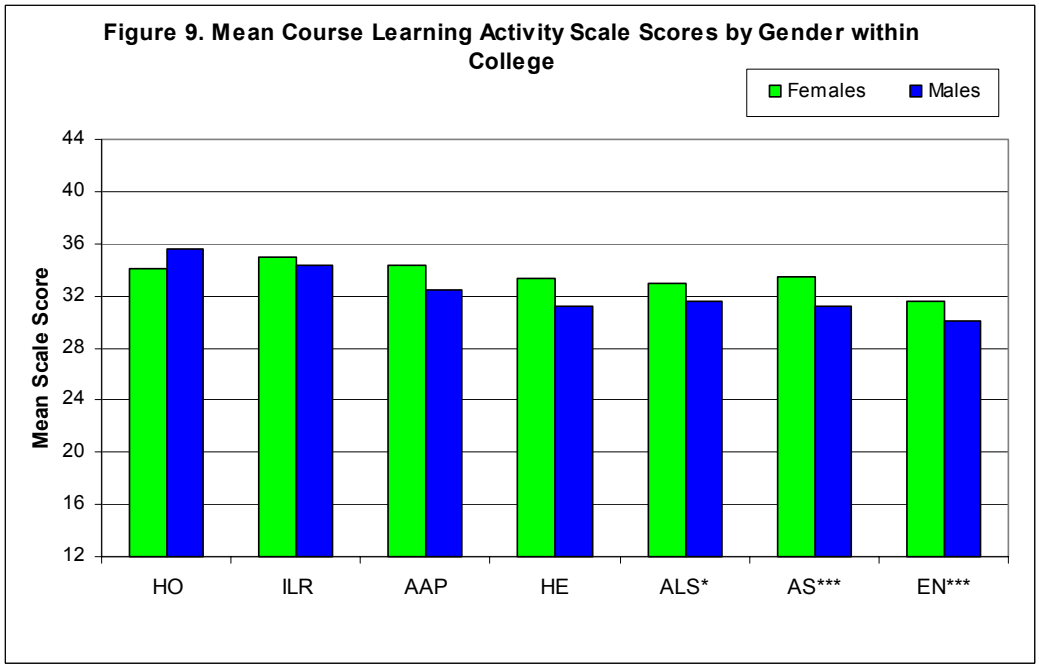
b. Course Learning Activities by Gender

On the whole, female students reported more frequent involvement in course learning activities than males. Figure 8 shows mean scores for each course learning activity by gender. These differences were

statistically significant for all but two activities: integrating facts and ideas, and working on group assignments or projects. The largest gender differences were associated with taking detailed class notes, summarizing class notes or readings, and completing assigned readings.



Gender differences in course learning involvement were largely consistent across colleges. Figure 9 shows mean course learning activity scale scores by gender by college. In all but HO, women were typically more involved in course learning activities than were males. Gender differences were statistically significant only in AS, EN, and ALS. This finding is partly a function of sample size, as statistical significance is harder to achieve as sample size decreases.



c. Course Learning Activities by Race

Table 3 shows mean scores for each course learning activity by race/ethnicity. In general, white students reported the highest involvement in course learning activities, followed very closely by URM students. International students reported comparatively lower involvement, while Asian students had the lowest involvement of all race groups. Race differences were statistically significant for all but two activities: summarizing information from class notes or readings; and working on class assignments or projects with other students. Statistically significant results consistently reflected differences in course learning involvement between white and Asian students.

Table 3. Mean Scores of Course Learning Activities by Race

	Asian	White	URM	Intl
Assigned readings*	3.29	3.37	3.28	3.19
Detailed class notes**	3.40	3.53	3.55	3.37
Class discussions***	2.64	2.99	2.86	2.78
Developed case study**	1.68	1.68	1.84	1.90
Integrated facts/ideas***	3.00	3.27	3.09	3.12
Summarized info	2.87	3.00	2.90	3.03
Project with others	2.90	2.87	2.88	2.94
Applied info outside***	2.61	2.88	2.84	2.76
Used other info in class***	2.57	2.88	2.90	2.73
Explained info to others***	2.89	3.18	3.08	3.00
Multi-source project**	2.91	3.10	3.04	3.00

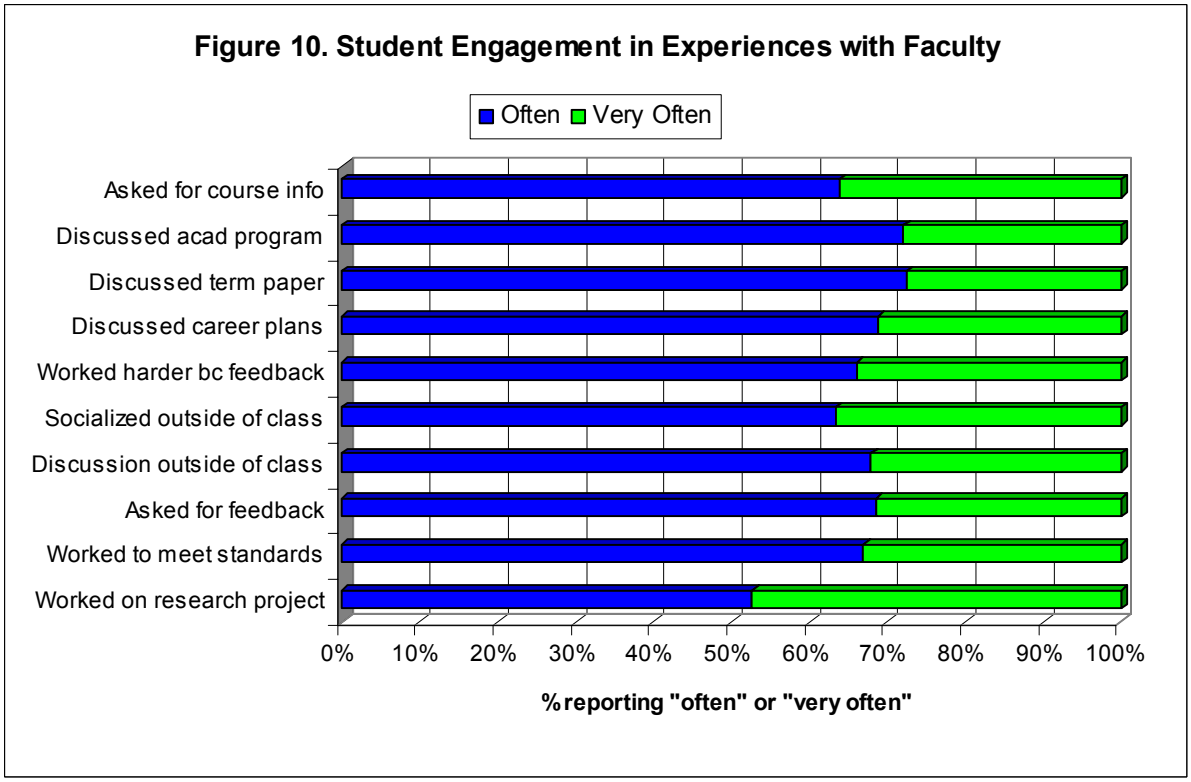
Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each course learning activity. Mean scores are based on a response scale of: 1 = never; 2 = occasionally; 3 = often; and 4 = very often
* $p < .05$; ** $p < .01$; *** $p < .001$

Race differences in course learning activity involvement may be partly due to associated differences in college affiliation. Asian and international students are over-represented in Engineering – the college with the lowest mean scale score for course learning involvement. To disentangle the relationships of race and college affiliation to course learning involvement, mean course learning activity scale scores were computed by race within each of the colleges. Results generally followed the pattern observed above with white students typically reporting the highest course learning involvement, and Asian students the lowest. However, race differences were only statistically significant in two colleges: AS and HO. Given the comparatively small number of non-white students enrolled within the separate colleges, results of race differences within colleges must be viewed as suggestive only.

2. Experiences with Faculty

Students indicated how frequently they were involved in ten types of experiences with faculty – ranging from relatively simple activities such as asking for course-related information and discussing their academic program with a faculty member, to more complex activities such as asking for comments on their academic performance, and working with a faculty member on a research project. Figure 10 shows the percentage of students doing each of these activities "often" and "very often." Faculty experiences are arranged from the least complex (asking for course information) to most complex (working on a research project).

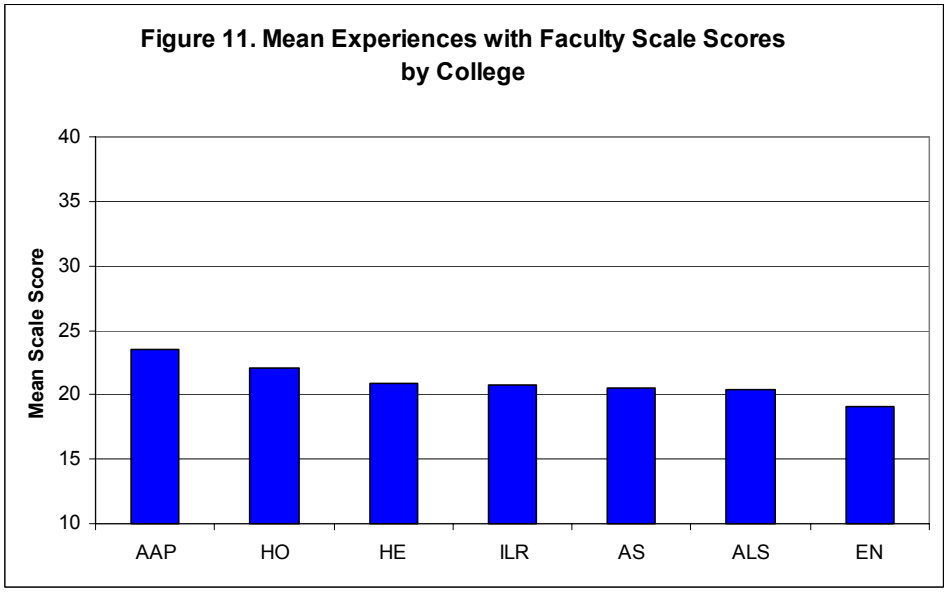
Students' reported levels of involvement in faculty-related experiences were among the lowest for all the College Activity scales. But as shown in Figure 10, frequency of involvement varied considerably across the individual scale items. Students were more likely to ask faculty members for specific information about a course they were taking (e.g., grades and make-up work) than they were to discuss academic course selection, ideas for assignments, or career plans. Faculty communication clearly seems to have an impact on students. More than 40% of students had often worked harder as a result of feedback they had received from an instructor, and 35% had often worked harder than they thought they could to



meet an instructor's expectations. However, students had less often asked faculty for comments on their performance, and fewer had often interacted with faculty outside of class – whether socially, for intellectual discussions, or to participate in a research project. For freshmen and sophomores, it appears that much of the onus for initiating student/faculty interaction rests with the faculty member.

a. Experiences with Faculty by College

Students' experiences with faculty varied significantly across the undergraduate colleges. Figure 11 presents mean scores for the experiences with faculty scale for each college. Possible scale values range from a minimum of 10 (equivalent to all students reporting "never" for all experiences) to a maximum of 40 (equivalent to all students reporting "very often" for all experiences). Students enrolled in AAP had the highest mean scale score, followed closely by HO), while those enrolled in EN had the lowest.



There were also statistically significant differences across colleges in the extent of student involvement with faculty for each of the individual items comprising this scale. Table 4 shows the mean scores for each faculty experience scale item by college.

Table 4. Mean Scores of Experiences with Faculty by College

	AAP	HO	HE	ILR	AS	ALS	EN
Asked for course info***	2.87	2.98	2.61	2.56	2.71	2.61	2.49
Discussed acad program***	2.53	2.49	2.57	2.23	2.44	2.58	2.34
Discussed term paper***	2.57	2.30	2.27	2.35	2.24	2.18	1.98
Discussed career plans***	2.02	2.13	2.20	2.00	2.03	2.18	1.90
Worked harder b/c feedback***	2.92	2.65	2.39	2.47	2.48	2.41	2.16
Socialized outside class*	1.88	1.66	1.57	1.68	1.57	1.52	1.50
Discussion outside class***	2.08	2.00	1.77	1.89	1.67	1.65	1.65
Asked for feedback***	2.47	2.20	1.77	1.95	1.88	1.72	1.74
Worked to meet standards***	2.75	2.42	2.18	2.39	2.20	2.12	1.99
Worked on research project**	1.41	1.27	1.56	1.28	1.36	1.47	1.31

Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each faculty experience item. Mean scores are based on a response scale of: 1 = never; 2 = occasionally; 3 = often; and 4 = very often.
* $p < .05$; ** $p < .01$; *** $p < .001$

Some of the patterns observed in Figure 10 are evident here as well. Across all colleges, students were most likely to have asked their instructors for course information, and were least likely to have socialized with faculty members outside of class or worked on a faculty research project. The largest differences in student involvement with faculty across colleges were associated with discussing term papers or projects, working harder because of feedback from an instructor, asking faculty for feedback on academic performance, and working harder than they thought possible to meet an instructor's expectations and standards. On these four scale items, AAP students reported the most frequent faculty involvement, followed by students in HO and ILR; students enrolled in EN and, to a lesser extent, ALS reported the lowest frequency of involvement. These differences in student involvement with faculty may be a function of the degree to which a college has an applied focus, and also of college enrollment and class size.

b. Experiences with Faculty by Gender

Figure 12 shows mean scores for each faculty experience scale item by gender. There were only four statistically significant gender differences in student engagement with faculty. Compared to male students, female students had participated in out-of-class discussions with faculty significantly less often, but reported a significantly greater frequency of working harder because of feedback received from an instructor, working harder than they had thought possible to meet an instructor's expectations, and discussing career plans. While statistically significant, gender differences were of little practical significance. The largest difference in mean scores was .15 on a four-point scale.

Gender differences in student involvement with faculty were even less evident when examined by college. Figure 13 displays mean faculty experience scale scores by gender within each college. Statistically significant gender differences were only observed in HO. On average, male students enrolled in HO reported significantly greater involvement with faculty members than did their female peers.

Figure 12. Mean Scores of Experiences with Faculty by Gender

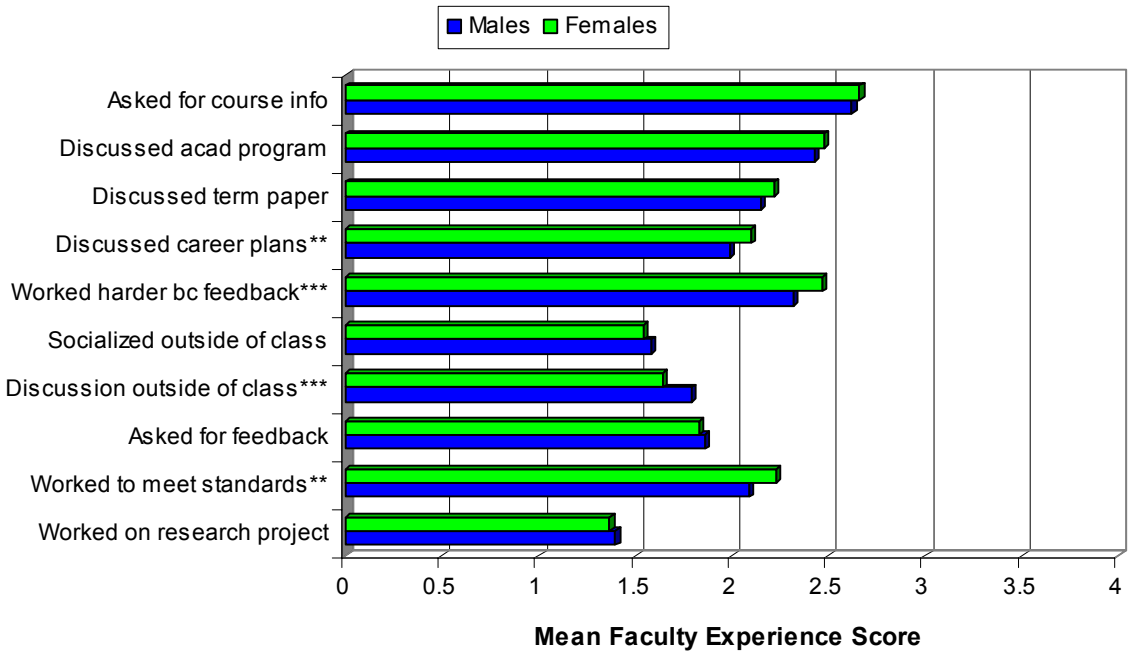
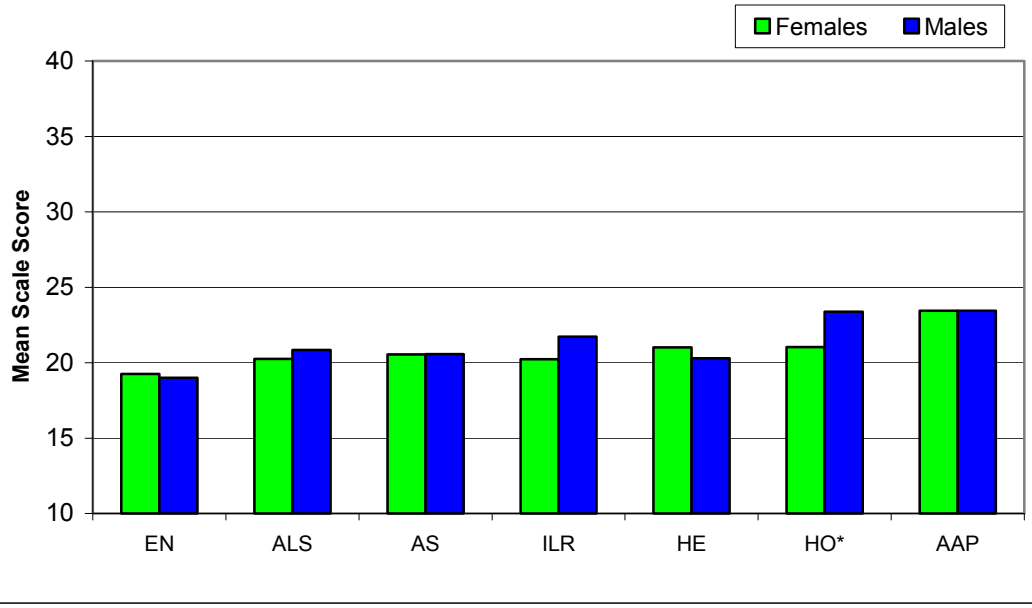


Figure 13. Mean Experiences with Faculty Scale Scores by Gender within College



c. Experiences with Faculty by Race

Table 5 shows mean scores for each faculty experience scale item by student race/ethnicity. On average, international students reported the most frequent involvement with faculty, followed closely by URM students. White and Asian students reported comparatively less frequent involvement. Race differences were statistically significant for all but two items: asking faculty for course information, and working harder to meet faculty standards or expectations.

Table 5. Mean Scores of Experiences with Faculty by Race

	Asian	White	URM	Intl
Asked for course info	2.59	2.64	2.69	2.71
Discussed acad program*	2.43	2.43	2.62	2.53
Discussed term paper**	2.06	2.20	2.21	2.37
Discussed career plans***	2.01	2.02	2.28	2.14
Worked harder bc feedback**	2.30	2.40	2.63	2.40
Socialized outside class**	1.50	1.54	1.66	1.76
Discussion outside class***	1.61	1.69	1.71	1.95
Asked for feedback*	1.81	1.82	1.90	2.07
Worked to meet standards	2.17	2.14	2.29	2.22
Worked on research project***	1.43	1.33	1.47	1.63

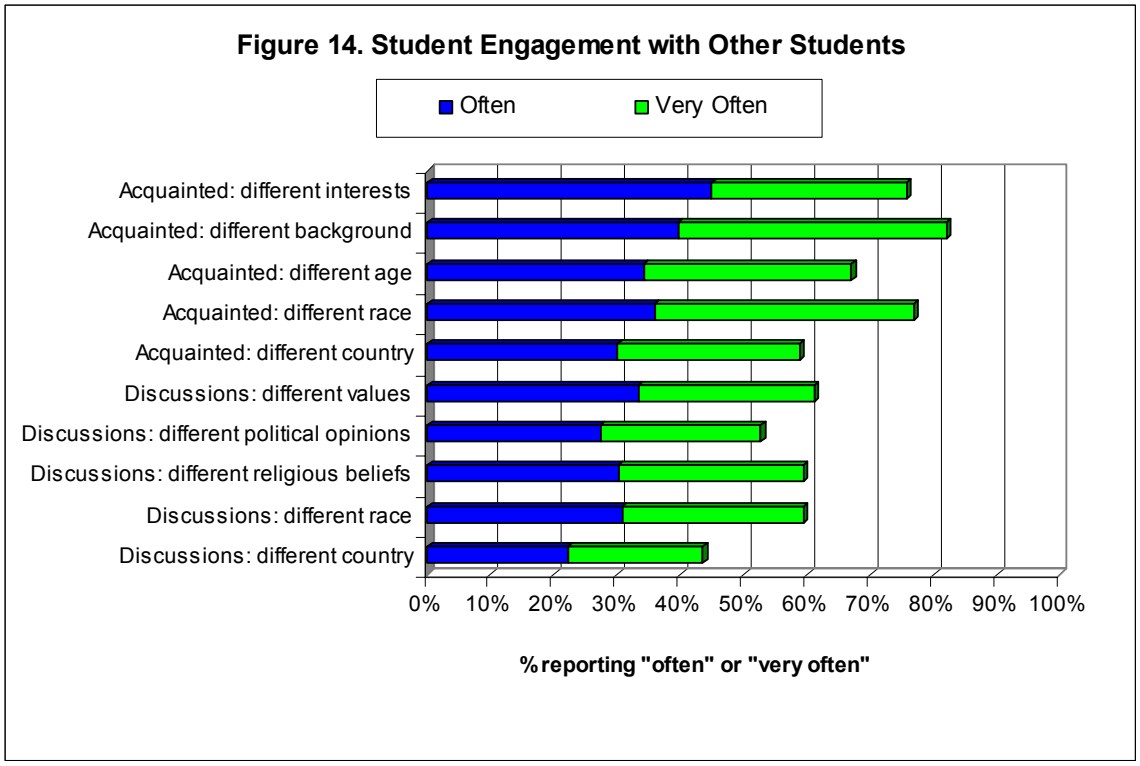
Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each faculty experience item. Mean scores are based on a response scale of: 1 = never; 2 = occasionally; 3 = often; and 4 = very often.
* $p < .05$; ** $p < .01$; *** $p < .001$

The association of student race with faculty involvement differed by college affiliation. Mean faculty experience scale scores were computed by race within each college. In five colleges – ALS, AS, HE, EN, and ILR – international and URM students generally reported greater involvement with faculty than white and Asian students. However, these differences were only statistically significant in EN and ILR. In AAP, international and Asian students were more frequently involved with faculty than their white, and particularly their URM, peers; these differences were not statistically significant. In HO, white students reported the most frequent faculty involvement while international students reported the least; these differences were statistically significant. Again, given the comparatively small proportion of non-white enrollment within separate colleges, these findings must be viewed with caution.

3. Interactions with Other Students

Students indicated how frequently they interacted with other students whose attributes, backgrounds or beliefs were different from their own. They reported on ten types of experience with other students – ranging from becoming acquainted with students whose interests differed from their own to having serious discussions with students from different countries. Figure 14 shows the percentage of students doing each of these activities "often" and "very often."

On the whole, Cornell students reported frequently interacting with a diverse group of peers. Roughly three-quarters had become acquainted "often" or "very often" with students whose interests, socioeconomic backgrounds, or race were different from their own, and more than half had met students from different countries and of different ages. More than half had frequently had serious discussions with students whose personal values, political opinions, religious beliefs, or race were different from their own. Two-fifths reported having serious discussions "often" or "very often" with students from different countries. However, the frequency with which students became acquainted and had serious discussions with other students varied significantly by college, by gender and, particularly, by race.



a. Interactions with Other Students by College

Table 6 displays the mean scores for each student interaction scale item by college. There were statistically significant differences among colleges on all ten measures. As the mean item scores show, students enrolled in AAP reported the most diverse interactions with other students; this difference was most pronounced for items concerning students from other races and countries. Students enrolled in HO frequently became acquainted with students who differed from them in various ways, while ILR students reported frequently engaging in serious discussions with students from whom they differed on intellectual or attitudinal grounds. The largest differences in interactions, however, were associated with EN; on all scale items, EN students reported significantly less frequent involvement with diverse peers than their counterparts in other colleges. These differences may reflect differences in both the total size and the diversity of student enrollments across colleges.

Table 6. Mean Scores of Interactions with Other Students by College

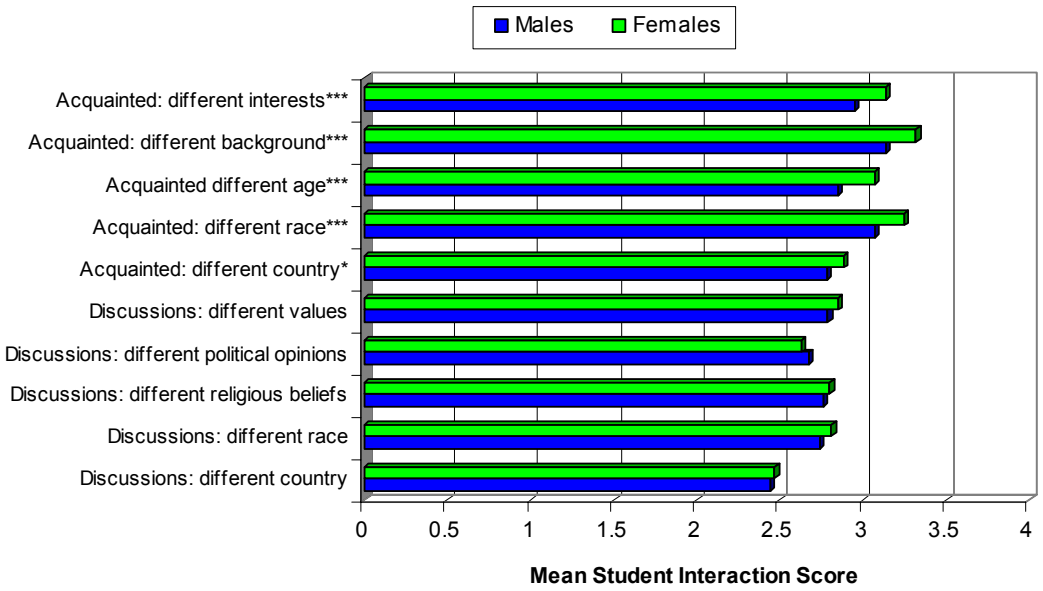
	AAP	HO	ILR	AS	ALS	HE	EN
Acquainted: different interests**	3.19	3.17	3.14	3.08	3.10	3.03	2.94
Acquainted: different background**	3.37	3.39	3.32	3.24	3.31	3.20	3.12
Acquainted different age***	3.24	3.22	3.02	2.97	3.06	2.90	2.79
Acquainted: different race**	3.49	3.18	3.23	3.17	3.22	3.16	3.07
Acquainted: different country***	3.34	3.21	2.68	2.82	2.78	2.72	2.81
Discussions: different values**	3.02	2.97	3.09	2.84	2.84	2.83	2.69
Discussions: different political opinions***	2.81	2.74	3.07	2.70	2.63	2.56	2.53
Discussions: different religious beliefs**	2.90	2.79	3.05	2.85	2.79	2.77	2.63
Discussions: different race**	3.08	2.73	3.00	2.83	2.78	2.74	2.64
Discussions: different country***	2.93	2.64	2.26	2.51	2.42	2.34	2.38

Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each student interaction item. Mean scores are based on a response scale of: 1 = never; 2 = occasionally; 3 = often; and 4 = very often.
** $p < .01$, *** $p < .001$

b. Interactions with Other Students by Gender

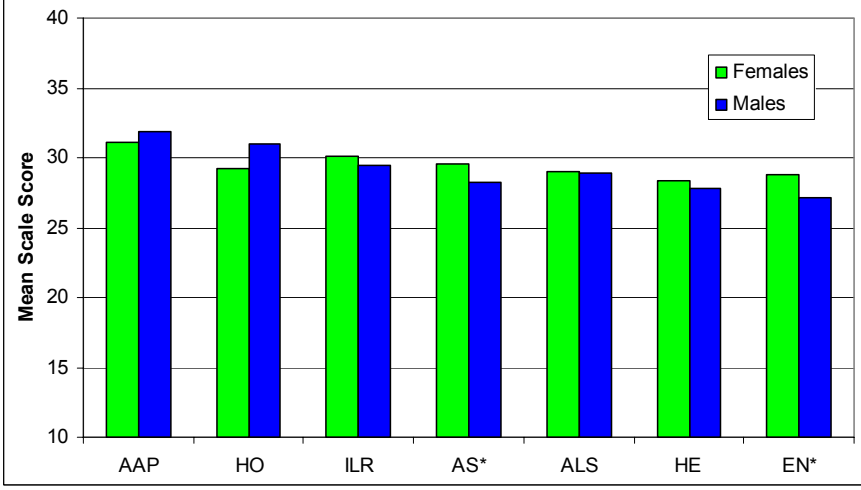
Figure 15 displays mean scores for each student interaction scale item by gender. Female students had become acquainted with diverse peers significantly more often than had male students. Females, on average, also reported having more frequent discussions with their peers on four of five measures. However, whether statistically significant or not, gender differences in interactions with other students were of little practical significance.

Figure 15. Mean Scores of Interactions with Other Students by Gender



Some variations were observed in the frequency of student interactions by gender when examined within colleges (see Figure 16). Female students reported more frequent peer interactions than male students in all colleges except AAP and HO. The largest gender differences were observed in HO, EN, and AS. Due to sample size, these differences were only statistically significant in the latter two colleges.

Figure 16. Mean Student Interaction Scale Scores by Gender within College



Statistical significance notwithstanding, the absolute value of gender differences was of little practical significance across all colleges.

c. Interactions with Other Students by Race

Table 7 shows mean scores for each student interaction scale item by student race/ethnicity. Race differences were larger than those observed among colleges and genders. Groups differed more in their frequency of discussions with other students than in forming acquaintances. In several respects, observed patterns of interaction make intuitive sense. International students had met and had discussions with students from different countries significantly more frequently than was reported by their American peers. URM students, on the other hand, reported significantly more frequent acquaintances and discussions with students of other races. Along with white students, URM students had more often engaged in discussions with students holding different values, political opinions, and religious beliefs than had their Asian and international counterparts. In comparison, Asian students appear to be the most insular group. In all but one measure of student interactions, Asian students reported significantly less frequent engagement than one or more of the other race groups.

Table 7. Mean Scores of Interactions with Other Students by Race

	Asian	White	URM	Intl
Acquainted: different interests*	2.97	3.09	2.98	3.05
Acquainted: different background	3.17	3.25	3.28	3.19
Acquainted different age*	2.87	2.96	3.04	3.14
Acquainted: different race***	3.18	3.12	3.40	3.20
Acquainted: different country***	2.93	2.72	3.01	3.32
Discussions: different values*	2.69	2.85	2.90	2.74
Discussions: different political opinions***	2.29	2.78	2.60	2.40
Discussions: different religious beliefs***	2.60	2.84	2.84	2.61
Discussions: different race***	2.70	2.76	3.08	2.67
Discussions: different country***	2.46	2.39	2.60	2.86

Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each student interaction item. Mean scores are based on a response scale of:
1 = never; 2 = occasionally; 3 = often; and 4 = very often.
* $p < .05$, *** $p < .001$

Race differences in student interactions were also examined within each college. The patterns observed in Table 7 were replicated, to a large extent, in the four largest colleges: AS, ALS, HE, and EN. However, there was more variability in the association between student race and peer interactions within the three smaller colleges. For example, in AAP, Asian students consistently had more frequent interactions with diverse peers than did students from other race groups; but only one of these differences was statistically significant. In HO, international students generally had the lowest mean interaction score of all race groups. Given the low enrollment of non-white students, these within-college race differences must be taken as suggestive only.

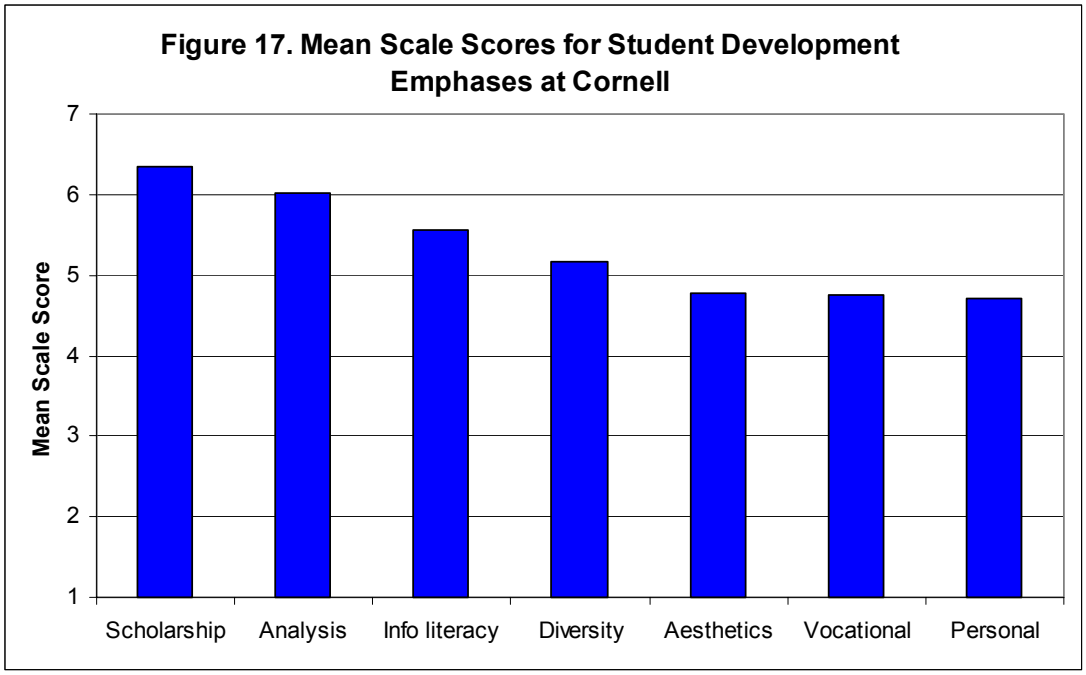
C. Research Question 3: Perceptions of Cornell

Students held very positive opinions about Cornell. In answer to the question, "How well do you like college?," 39% of CSEQ respondents said they liked it and 46% said they were enthusiastic about it. While this positive response held for all analysis groups, there were significant differences by gender (females were more enthusiastic than males), by race (white and international students were more enthusiastic than Asian and URM students), and by class (freshmen were more enthusiastic than sophomores). Similar patterns were observed when students were asked, "If you could start over again, would you go to the same institution you are now attending?" The CSEQ also asks students to report their perceptions of two dimensions of the college environment: the emphasis placed on a variety of student development goals and qualities; and the quality of their relationships with other students, administrative personnel and faculty. These questions provide measures of the perceived academic climate at Cornell.

1. Student Development Emphases

Students reported the extent to which they felt Cornell emphasized various aspects of students' development on a seven-point scale with the following anchors: 7 = strong emphasis and 1 = weak emphasis. The mean scores for each development aspect are shown in Figure 17.

Figure 17. Mean Scale Scores for Student Development Emphases at Cornell



Overall, students felt that Cornell placed the strongest emphasis on the development of scholarly and analytical skills, and the weakest emphasis on developing aesthetic qualities, vocational competence, and the personal relevance of courses. However, there were significant differences in students' perceptions by college, race and, to a lesser extent, by gender.

a. Student Development Emphases by College

Table 8 presents the mean scores for each student development emphasis by college. Two commonalities were observed; across all colleges, scholarly qualities was consistently perceived as the

most strongly emphasized developmental aspect, while appreciation of human diversity was perceived as a comparatively moderate emphasis.

Table 8. Mean Scale Scores of Student Development Emphases by College

	ALS	AAP	AS	EN	HE	HO	ILR
Scholarly qualities	6.35	6.32	6.32	6.30	6.50	6.31	6.39
Analytical qualities**	6.01	6.28	5.97	6.02	6.23	5.78	6.00
Information literacy skills***	5.57	5.10	5.35	5.79	5.63	6.31	5.53
Appreciation of diversity	5.19	4.88	5.11	5.12	5.32	5.39	5.21
Aesthetic qualities**	4.70	5.42	4.77	4.66	4.81	5.09	4.54
Vocational competence***	4.76	4.78	4.33	4.93	4.93	6.04	4.95
Personal/practical relevance***	4.64	4.77	4.45	4.75	5.04	5.59	5.09

Note. Light shading indicates highest mean score and darker shading indicates lowest mean score for each student development emphasis *within each college* . Mean scores are based on a 7-point response scale where: 1 = weak emphasis and 7 = strong emphasis.
** $p < .01$; *** $p < .001$

There were statistically significant differences by college in students' perceptions of the other five developmental emphases. For example, developing analytical skills was the second-strongest emphasis in all colleges except HO, and was the highest of all in AAP. HO students perceived a stronger emphasis on developing information literacy skills than did students in all other colleges; EN students reported the second highest mean score for this measure. AAP students perceived developing aesthetic qualities as a stronger emphasis than their counterparts in ALS, AS, EN and ILR. Students enrolled in HO, ILR and HE reported a stronger emphasis on vocational competence, and the personal and practical relevance of courses, than their peers in AS. These differences are consistent with expected curricular emphases for each college, particularly the extent to which an applied or theoretical focus exists.

b. Student Development Emphases by Gender

Considering Cornell as a whole, there were few gender-associated differences in students' perceptions of developmental emphases (see Figure 18). Compared to male students, female students reported a stronger emphasis on developing scholarship qualities (6.38 versus 6.28); while statistically significant, this difference is of little practical significance.

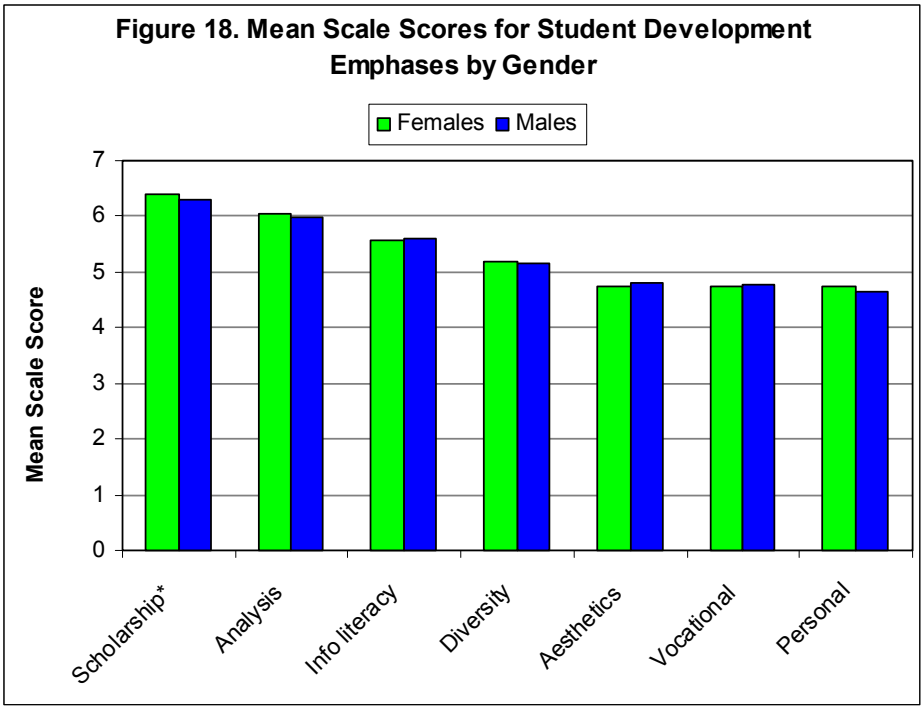


Figure 18. Mean Scale Scores for Student Development Emphases by Gender

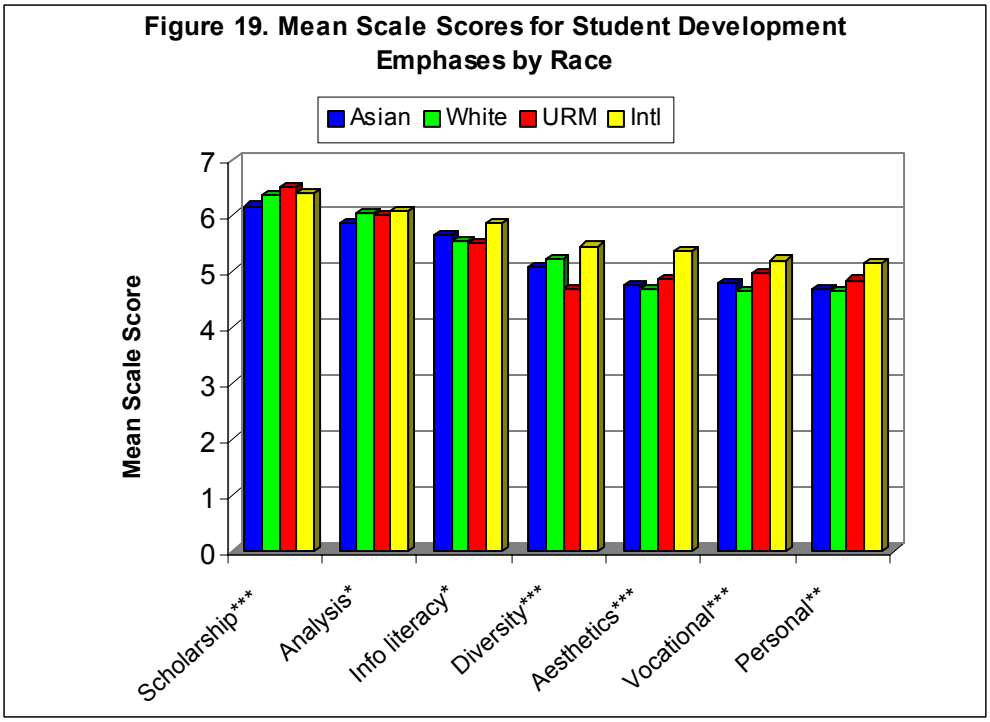
However, different patterns of gender differences were evident across colleges. There were no statistically significant gender differences in perceived developmental emphases among students enrolled in AAP,

AS, EN and ILR. In ALS, male students reported a significantly stronger emphasis on developing aesthetic qualities than female students (5.02 versus 4.56). Among HE students, females reported significantly higher mean scores than males on three emphasis measures: scholarship (6.57 versus 6.28), analytical skills (6.30 versus 5.98), and information literacy (5.76 versus 5.18). There were also three statistically significant gender differences among HO students; female students reported stronger emphases than males on information literacy (6.53 versus 6.05), vocational competence (6.26 versus 5.77), and personal and practical relevance of courses (6.06 versus 5.02).

c. Student Development Emphases by Race

Perceptions of student development emphases varied considerably by race, as shown in Figure 19. These differences were statistically significant on all seven measures. Compared to students of other races/ethnicities, Asian students perceived a weaker emphasis on developing scholarly and analytical qualities. International students reported a stronger emphasis on developing information literacy skills, aesthetic qualities, vocational competence, and personal and practical relevance of courses. URM students saw a weaker emphasis on appreciating human diversity than their non-URM peers.

Figure 19. Mean Scale Scores for Student Development Emphases by Race



Race differences were also examined within each college. There were fewer statistically significant differences; this finding is partly an artifact of smaller sample sizes, particularly of non-white students. The patterns of race differences observed in Figure 19 were generally replicated within most colleges, but some variations were also observed. For example, in AAP, Asian students perceived a greater emphasis on developing aesthetic qualities and a weaker emphasis on appreciating diversity than their peers of other races. In HE, international and Asian students reported a weaker emphasis on diversity than their peers, while URM students saw the strongest emphasis on the personal and practical relevance of their courses. Among HO students, international students perceived the highest emphasis on scholarship and analytical qualities.

2. Quality of Relationships

Students rated the quality of their relationships with other students, administrative personnel and offices, and faculty members on three 7-point scales. Each scale has a descriptive label for its anchor points and provides a continuum from negative to positive relationship qualities. The anchor labels for each scale are provided below:

Relationship Scale	Low (1)	High (7)
Other students	Competitive, uninvolved, sense of alienation	Friendly, supportive, sense of belonging
Administrative personnel and offices	Rigid, impersonal, bound by regulations	Helpful, considerate, flexible
Faculty	Remote, discouraging, unsympathetic	Approachable, helpful, understanding, encouraging

Figure 20 presents the results of these questions for all survey respondents. Students reported generally positive relationships with all three constituencies; more than 50% rated these relationships within the positive end of the scale (response categories 5 through 7). However, it is clear that students enjoyed the most positive relationships with their fellow students (more than 80% in the positive range of the scale) and the least positive relationships with administrative personnel (less than 60% in the positive range).

Figure 20. Quality of Relationships

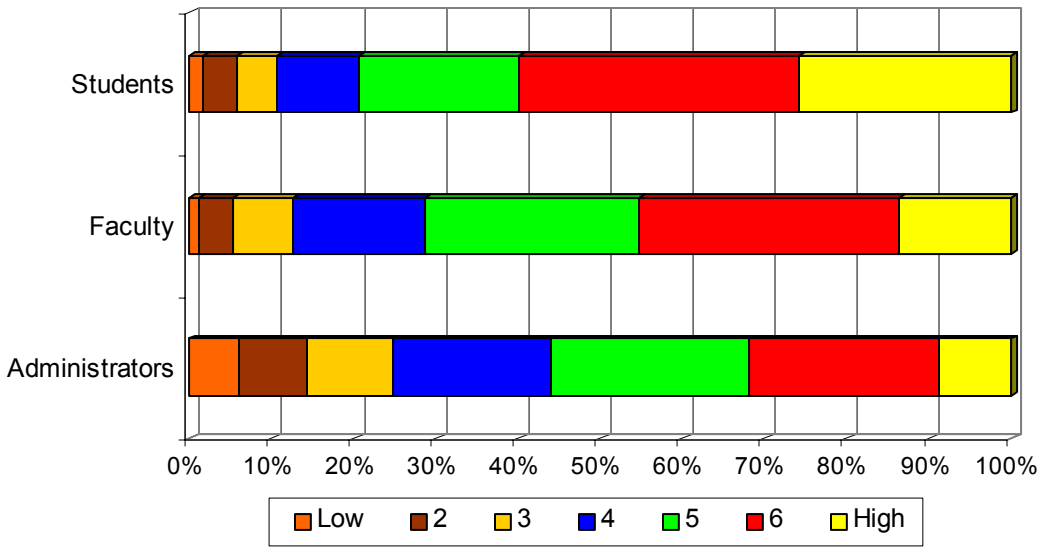


Table 10 displays the mean scores of these three quality-of-relationship scales by college, gender and race. Regardless of the unit of analysis, the same general pattern shown in Figure 20 is evident here. Students reported generally positive relationships (all mean scores are greater than 4.0). They gave the most positive ratings to their relationships with other students, slightly less positive ratings to their relationships with faculty, and the least positive ratings to their relationships with administrative personnel. However, there were statistically significant differences in students' ratings of their campus relationships by college, race and to a lesser extent, by gender. Given the larger differences observed for students' ratings of relationships with administrators and faculty, the following sections highlight results of these two scales.

Table 10. Mean Scale Scores of Quality of Relationships by College, Gender and Race

	Quality of Relationships with		
	Students	**Administrators**	**Faculty**
By College			
ALS	5.44	4.62	5.14
AAP	5.63	4.40	5.05
AS	5.39	4.28	5.19
EN	5.40	4.45	4.88
HE	5.66	5.01	5.14
HO	5.94	5.05	5.66
ILR	5.63	4.49	4.98
Significance	**	***	***
By Gender			
Female	5.56	4.63	5.21
Male	5.37	4.37	5.00
Significance	**	***	***
By Race			
White	5.44	4.44	5.14
Asian	5.58	4.41	4.88
URM	5.26	4.80	5.25
International	5.72	5.09	5.40
Significance	**	***	***

Note. Mean scores are based on a 7-point response scale where: 1 = low and 7 = high.
** $p < .01$; *** $p < .001$

a. Quality of Relationships by College

Figure 21 presents the distribution of students' ratings of their relationships with Cornell administrative personnel by college. Compared to students enrolled in other colleges, HE and HO students rated their relationships with administrative personnel and offices more positively; more than two-thirds of these students selected ratings in the positive range (5 through 7 or "helpful"). In comparison, only half of students enrolled in AS and AAP rated their relationships with administrators positively.

Figure 21. Quality of Relationships with Administrators by College

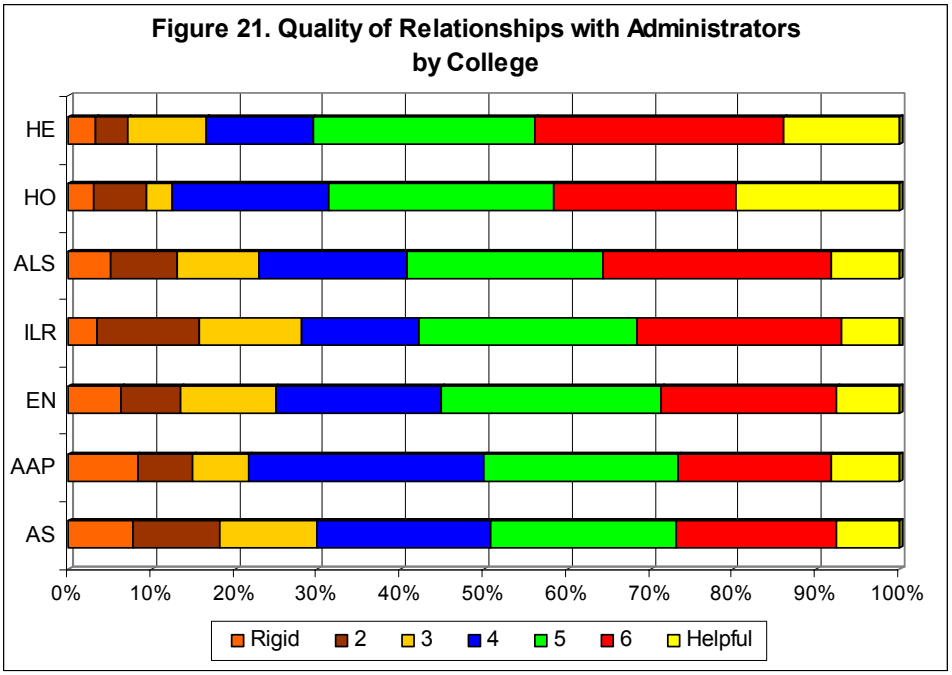
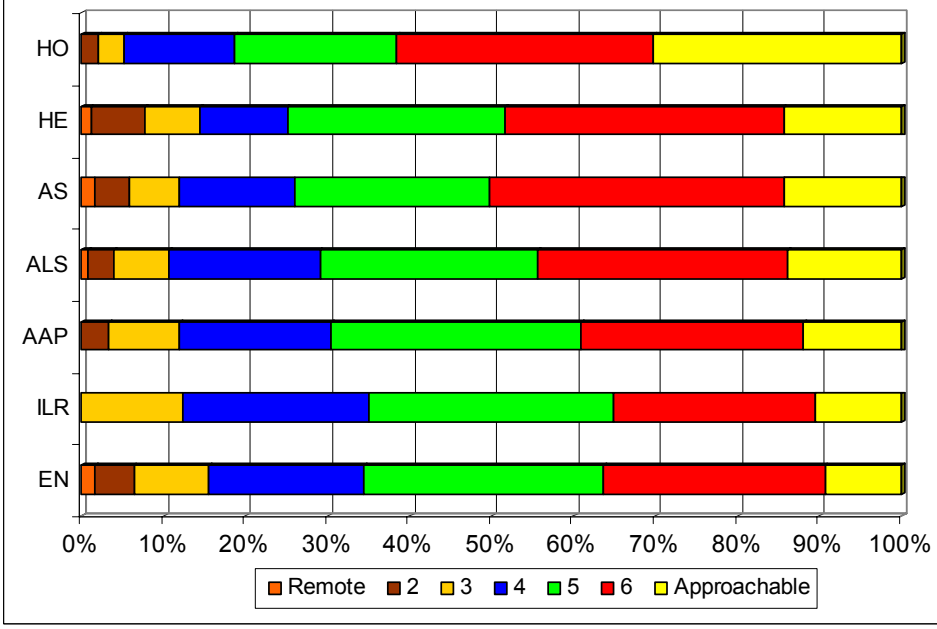


Figure 22 displays students' ratings of their relationships with faculty by college. On the whole, students were more likely to view faculty as approachable than as remote. HO students reported the most positive relationships with faculty members, with more than 80% rating these relationships positively. Students in HE, AS, and ALS followed, with more than 70% reporting positive relationships. EN students had the least positive feelings about faculty; 15% reported negative relationships (1 to 3 on the scale).

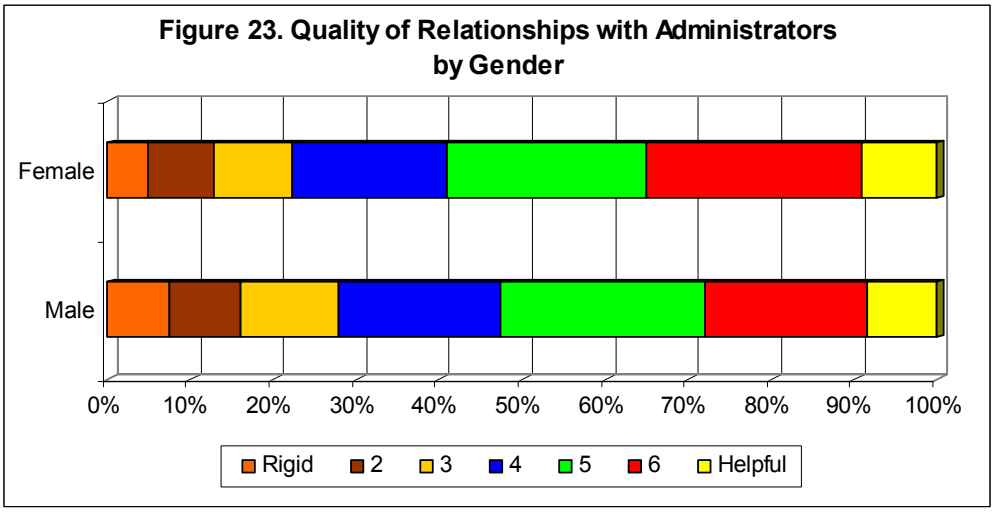
Figure 22. Quality of Relationships with Faculty by College

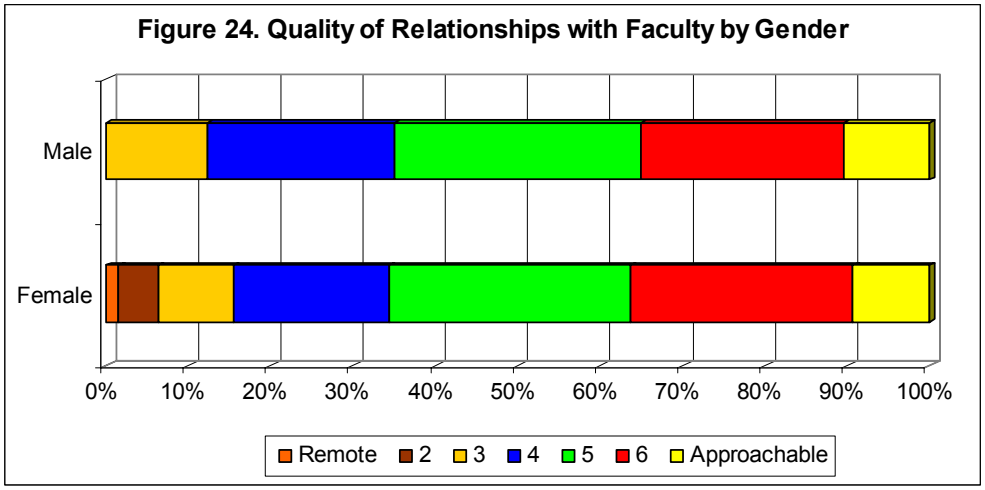


b. Quality of Relationships by Gender

Figure 23 presents students' ratings of their relationships with administrators by gender, and Figure 24 presents students' ratings of their relationships with faculty by gender.

Figure 23. Quality of Relationships with Administrators by Gender

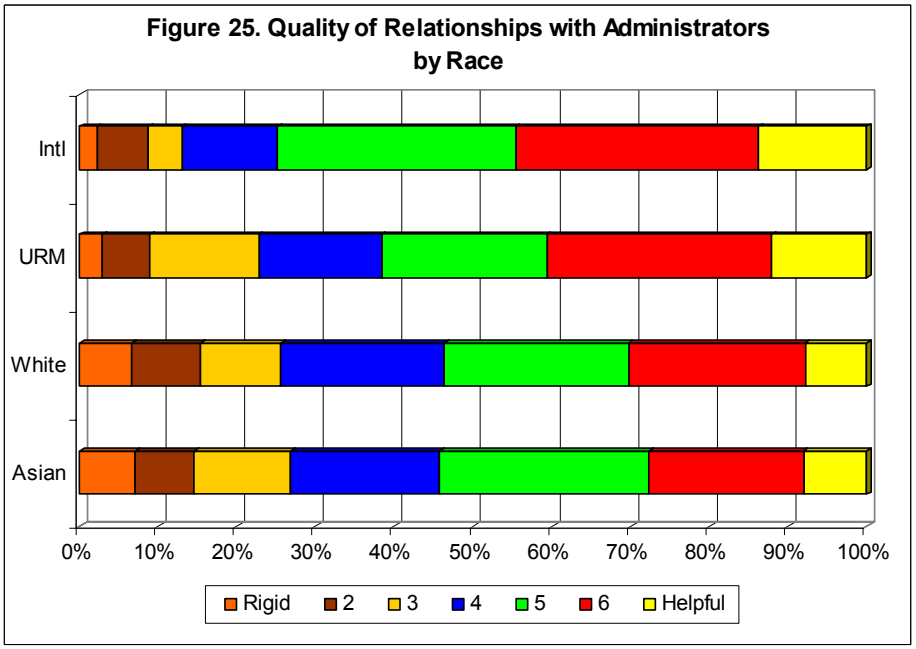




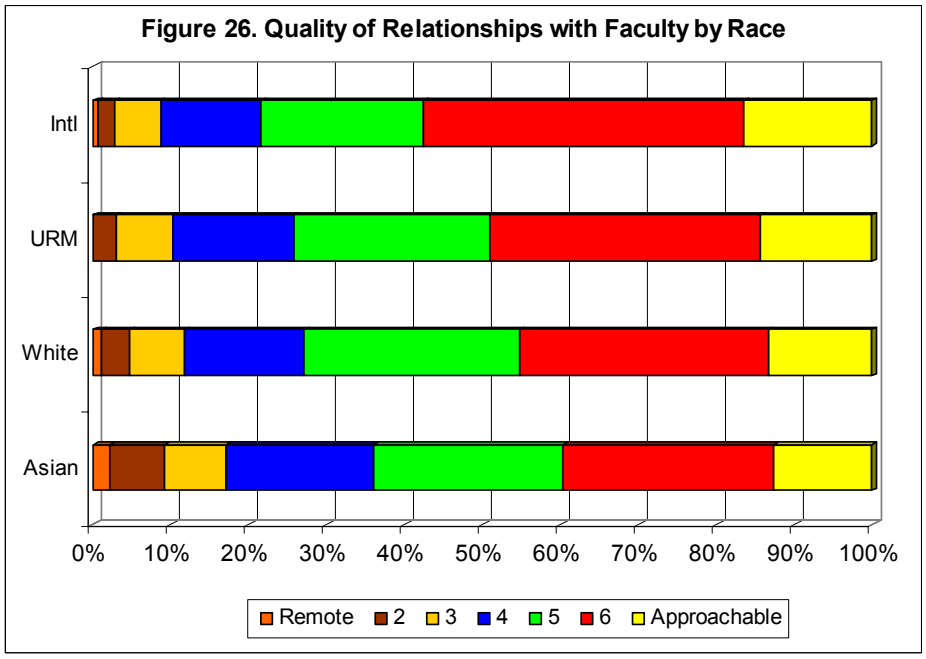
More than half of both genders rated relationships with administrators and faculty members positively. Female students gave significantly more positive ratings to these campus relationships than male students. However, statistical significance notwithstanding, gender differences were of little practical significance. Gender differences in ratings of administrator and faculty relationships were also examined within colleges. Results followed the same patterns observed in Figures 23 and 24, with females giving more positive ratings than males. Statistically significant differences were only observed in two colleges: EN and HE.

c. Quality of Relationships by Race

Figure 25 shows students' ratings of their relationships with administrative personnel and offices by race. Three-quarters of international students rated these relationships positively (5 to 7 on the scale), compared to 62% of URM students, and 54% of Asian and white students.



International students also gave the most positive ratings of relationships with faculty members. As shown in Figure 26, nearly 80% of international students rated these relationships positively. In comparison, Asian students had a significantly less positive view; only 64% reported positive relationships (5 to 7 on the scale) while 17% reported negative relationships (1 to 3 on the scale). White and URM students' ratings of faculty relationships were similar to, but slightly less positive than, those of international students.



Race differences in ratings of relationships were also examined within colleges. Only two significant differences were observed. Among AS students, Asians had significantly less positive ratings of faculty than international students. In EN, international and URM students gave significantly more positive ratings of relationships with administrators than white and Asian students.

D. Research Question 4: Estimated Gains from Cornell Experience

In the final section of the CSEQ, students were asked to estimate how much they had gained or made progress in 25 separate areas of skills or development over the course of their university experience up to now. Students used the following response scale to indicate their gains in each area: 1 = very little, 2 = some, 3 = quite a bit, and 4 = very much. To be sure, these are subjective estimates of gains. These measures do not consider students' entering levels of skills and abilities, and hence cannot account for ceiling effects, nor can the contributions of Cornell experiences on student development be disentangled from those of maturation or other external events. Nevertheless, it is useful to examine students' perceptions of their areas of greatest and least development, and how these compare across colleges, genders, and races.

1. Estimated Gains from Cornell Experience

Appendix tables provide detailed analyses of students' estimates of gains in each of the 25 areas of skills and abilities. For the purposes of this summary, Table 11 displays the mean score and rank order of each these areas for all CSEQ respondents. Light shading indicates the top five ranked areas, and darker shading indicates the five lowest ranked areas of gain.

Table 11. Mean Scores and Rank Order of Estimated Gains from Cornell Experience

	Estimated Gain	
	Mean	**Rank**
Understanding self	3.20	1
Learning on one's own	3.16	2
Thinking analytically	3.12	3
Synthesizing ideas	3.10	4
Getting along with others	3.10	5
Preparation for specialty	3.10	6
Adaptability	3.09	7
Computing skills	3.05	8
Career information	3.00	9
Values and ethical standards	2.97	10
General education	2.87	11
Writing skills	2.83	12
Working in teams	2.82	13
Quantitative ability	2.80	14
Speaking skills	2.79	15
Vocational preparation	2.74	16
Aware of philosophical diversity	2.73	17
Understanding new technology	2.63	18
Understanding science	2.59	19
Evaluating technological change	2.47	20
Personal health habits	2.37	21
Knowledge of world diversity	2.29	22
Appreciation of history	2.21	23
Appreciation of literature	2.12	24
Appreciation of arts	2.11	25

Note. Light shading indicates the five highest ranked areas of gain and darker shading indicates the five lowest ranked areas of gain. Mean scores are based on the following response scale: 1 = very little; 2 = some; 3 = quite a bit; 4 = very much.

On average, Cornell freshmen and sophomores reported the greatest gains in developing higher-order cognitive skills (e.g., independent learning, analysis and synthesis), in understanding themselves, and getting along with others. Other areas in which students reported gaining "quite a bit" (mean score of 3.0 or higher) were acquiring specialization for further education in a professional, scientific or scholarly field; adapting to change; computing skills; gaining information about careers; and developing personal values and ethical standards.

Conversely, developing personal health and fitness habits, and four areas related to the arts and humanities – knowledge of world diversity, and appreciation of history, literature and the arts – were the areas in which students reported the lowest gains.

While many similarities were evident, there were also differences in the patterns of gains reported by college, gender and race.

a. Estimated Gains by College

Table 12 presents students' estimates of gains, in order from most to least gain, by college. With the exception of "thinking analytically", the first seven developmental areas in Table 12 were associated with large gain estimates (mean greater than or equal to 3.0) across all colleges. These areas of self-development (understanding self, getting along with others, adaptability) and intellectual development (independent learning, ability to synthesize information, and preparation for future specialization) appear to represent a core of common learning outcomes in the undergraduate curriculum at Cornell. However, there was great variability evident in gains estimates for the remaining developmental measures across colleges. To a large degree, differences reflect corresponding variations in curricular emphases and goals associated with each college.

Table 12. Mean Scores (in Rank Order) of Estimated Gains from Cornell Experience by College

	ALS	AAP	AS	EN	HE	HO	ILR
Understanding self*	3.19	3.29	3.22	3.10	3.31	3.32	3.23
Learning on one's own*	3.19	3.34	3.18	3.04	3.17	3.29	3.28
Thinking analytically***	3.09	3.12	3.10	3.31	3.06	2.82	3.04
Synthesizing ideas	3.04	3.32	3.08	3.15	3.16	3.00	3.19
Getting along with others**	3.06	3.17	3.09	3.01	3.23	3.34	3.19
Preparation for specialty**	3.06	3.07	3.04	3.13	3.13	3.34	3.32
Adaptability**	3.04	3.14	3.04	3.11	3.16	3.35	3.26
Computing skills***	3.02	2.81	2.83	3.27	3.03	3.64	3.21
Career information***	2.99	3.14	2.83	3.08	3.05	3.64	3.09
Values and ethical standards**	2.96	2.92	3.04	2.81	3.09	3.01	3.05
General education***	2.91	2.71	3.06	2.65	2.92	2.71	2.77
Writing skills***	2.79	2.69	2.93	2.60	2.87	3.27	3.05
Working in teams***	2.79	2.73	2.68	2.79	2.96	3.51	3.26
Quantitative ability***	2.84	2.15	2.64	3.26	2.69	2.45	2.35
Speaking skills***	2.88	3.08	2.76	2.54	2.85	3.39	2.96
Vocational preparation***	2.67	3.03	2.44	2.98	2.74	3.64	2.96
Aware of philosophical diversity***	2.61	2.93	2.90	2.54	2.86	2.66	2.88
Understanding new technology***	2.92	1.83	2.46	3.01	2.55	1.97	1.96
Understanding science***	2.93	1.62	2.47	2.90	2.58	1.76	1.84
Evaluating technological change***	2.78	1.79	2.35	2.63	2.56	1.85	2.12
Personal health habits**	2.43	2.08	2.33	2.29	2.51	2.61	2.47
Knowledge of world diversity***	2.10	2.69	2.50	2.05	2.22	2.45	2.49
Appreciation of history***	2.00	3.00	2.49	1.83	2.19	2.08	3.02
Appreciation of literature***	2.03	2.44	2.38	1.85	2.12	1.76	2.25
Appreciation of arts***	1.96	3.10	2.26	1.92	2.13	1.98	2.04

Note : Light shading indicates highest five and darker shading indicates lowest five mean gains within college. Mean scores are based on the following response scale: 1 = very little; 2 = some; 3 = quite a bit; 4 = very much.
* $p < .05$; ** $p < .01$; *** $p < .001$

- The largest differences among colleges were associated with estimated gains in vocational preparation, appreciation of history, and in the development of quantitative, scientific and technological abilities.

- Compared to students in other colleges, HO students estimated significantly larger gains, and AS students estimated significantly lower gains, in their vocational preparation.

- AAP and ILR students, and to a slightly lesser degree, AS students, reported significantly greater progress in developing an appreciation of history than their counterparts in other colleges.

- EN and ALS students consistently estimated the largest gains in their quantitative, scientific and technological abilities, while AAP, HO and ILR students estimated the smallest.

b. Estimated Gains by Gender

Table 13. Mean Scores (in Rank Order) of Estimated Gains from Cornell Experience by Gender

	Female	Male
Understanding self***	3.27	3.12
Learning on one's own***	3.22	3.08
Thinking analytically***	3.06	3.20
Synthesizing ideas	3.11	3.09
Getting along with others***	3.17	3.01
Preparation for specialty*	3.05	3.15
Adaptability*	3.13	3.04
Computing skills**	2.99	3.12
Career information	2.97	3.04
Values and ethical standards***	3.05	2.88
General education	2.91	2.83
Writing skills**	2.88	2.76
Working in teams	2.86	2.77
Quantitative ability***	2.65	2.98
Speaking skills**	2.84	2.72
Vocational preparation***	2.66	2.83
Aware of philosophical diversity***	2.81	2.65
Understanding new technology***	2.51	2.78
Understanding science***	2.51	2.69
Evaluating technological change***	2.39	2.57
Personal health habits	2.37	2.37
Knowledge of world diversity*	2.33	2.23
Appreciation of history	2.25	2.17
Appreciation of literature	2.19	2.05
Appreciation of arts*	2.15	2.05

Note : Light shading indicates highest five and darker shading indicates lowest five mean gains within gender. Mean scores ae based on the following response scale: 1 = very little; 2 = some; 3 = quite a bit; 4 = very much.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 13 shows students' mean estimates of gains, in rank order, by gender. Female and male students both identified the same five areas of weakest gains: developing personal health habits, knowledge of world diversity, and appreciation of history, literature, and the arts. Gender differences in estimated gains were also evident. These variations in estimated gains may reflect broader differences in gender roles, and/or may be a function of gender differences in representation among colleges.

- Both female and male students estimated strong gains (means ≥ 3.0) in the first seven developmental areas displayed in Table 13. But within these seven measures, female students estimated significantly higher gains in areas of self-development (understanding others, getting along with others, and adapting to change). Male students reported significantly greater gains in their analytical and scholarly abilities (thinking analytically, preparing for a future specialization, and computing skills).

- The largest gender differences, consistently favoring males, were associated with gains in math, science and technology-related measures (quantitative ability, understanding new technology and science, and evaluating technological change).

c. Estimated Gains by Race

Table 14 presents students' mean estimates of gains by race in descending order of magnitude.

- Regardless of race, students reported their largest (within top five) gains in understanding themselves, and their ability to pursue learning on their own.
- Although not always among the top five ranks, students of all races also reported large gains (means ≥ 3.0) in their analytical skills, ability to get along with others, adaptability to change, and computing skills.
- Students of all races estimated achieving the smallest gains in their ability to appreciate history, literature and the arts.
- Overall, international students estimated the largest developmental gains (means ≥ 3.0 on 16 gain measures). URM students gave the next highest gains estimates (means ≥ 3.0 on 10 gain measures), followed by white students (means ≥ 3.0 on 9 gain measures). Asian students estimated comparatively lower gains in their development (means ≥ 3.0 on 6 gain measures).
- The largest race differences in gains estimates were associated with the humanities (world diversity, philosophical diversity, history, literature and the arts), speaking skills and vocational preparation.

Table 14. Mean Scores (in Rank Order) of Estimated Gains from Cornell Experience by Race

	White	Asian	URM	Intl
Understanding self	3.20	3.13	3.30	3.31
Learning on one's own*	3.17	3.06	3.26	3.25
Thinking analytically**	3.13	3.02	3.14	3.31
Synthesizing ideas**	3.11	2.98	3.19	3.22
Getting along with others	3.09	3.07	3.19	3.15
Preparation for specialty***	3.13	2.94	3.20	3.12
Adaptability*	3.07	3.05	3.14	3.27
Computing skills*	3.03	3.02	3.16	3.23
Career information**	3.00	2.91	3.13	3.11
Values and ethical standards**	2.96	2.89	3.10	3.14
General education***	2.88	2.77	2.84	3.12
Writing skills***	2.85	2.61	2.98	3.04
Working in teams	2.79	2.85	2.93	2.91
Quantitative ability*	2.76	2.83	2.78	3.04
Speaking skills***	2.80	2.59	2.98	3.01
Vocational preparation***	2.71	2.64	2.89	3.08
Aware of philosophical diversity***	2.72	2.65	2.77	3.03
Understanding new technology	2.63	2.62	2.56	2.74
Understanding science	2.60	2.56	2.50	2.71
Evaluating technological change	2.49	2.42	2.39	2.61
Personal health habits	2.35	2.37	2.47	2.37
Knowledge of world diversity***	2.23	2.26	2.37	2.75
Appreciation of history***	2.23	2.04	2.33	2.40
Appreciation of literature***	2.13	2.00	2.26	2.32
Appreciation of arts*	2.09	2.07	2.20	2.29

Note : Light shading indicates highest five and darker shading indicates lowest five mean gains within race. Mean scores are based on the following response scale: 1 = very little; 2 = some; 3 = quite a bit; 4 = very much.
* $p < .05$; ** $p < .01$; *** $p < .001$