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A Comparison of International Student and American Student Engagement in Effective Educational Practices

American society is more diverse now than at any previous time (Keller, 2001). It is no surprise, then, that knowledgeable observers both inside and outside the academy say that an important goal of higher education is to prepare culturally competent individuals with the ability to work effectively with people from different backgrounds (Carnevale, 1999; Mori, 2000; Sandhu, 1995; Smith & Schonfeld, 2000). Promising approaches include creating learning environments that promote and value diversity, as well as intentionally exposing students to multiple and sometimes competing perspectives that challenge previously unexamined assumptions. When imbedded in appropriate pedagogy, such challenges can promote high levels of intellectual and personal development (Astin, 1977, 1993; Chickering & Reisser, 1993; Keniston & Gerzon, 1972; Kuh et al., 1991; Sanford, 1962). Thus, diversity on college campuses is not a gratuitous or idealistic goal; it is essential in order for college students to learn how to live and work effectively with others who differ from themselves (Gurin, 1999; Smith & Schonfeld, 2000).

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International students constitute an increasingly relevant and important source of diversity on college campuses. Attending a school enrolling substantial numbers of international students may advantage American students in the marketplace, to the extent that the experience increases their cultural sensitivities and skills in working with people from different backgrounds (Calleja, 2000; Carnevale, 1999). The good news is that more American students may now be getting these opportunities. In 2001, the total international student enrollment at colleges and universities in the U.S. was nearly 550,000, a 6.4% increase over 2000 and the biggest single-year jump in 20 years (Institute of International Education, 2002). International students represent almost 5% of all students (Digest of Educational Statistics, 2001). About 237,000 are undergraduates, almost 3% of the total number of undergraduates in the U.S. (Marcus & Hartigan, 2000). Asian students comprise over half (56%) of all international enrollments, followed by students from Europe (14%), Latin America (12%), the Middle East (7%), Africa (6%), and North America and Oceania (5%) (Institute of International Education, 2002). Although U.S. colleges and universities enroll more international students than any other country in the world (Marcus & Hartigan, 2000), most of what is reported in the literature about students' experiences emphasizes the challenges they face in adapting to a foreign living and learning environment. Most international students report some degree of culture shock when they arrive and begin their studies (Furnham, 1988; Olaniran, 1996, 1999; Selvadurai, 1992; Thomas & Althen, 1989). That shock is typically manifested as stress, anxiety, and feelings of powerlessness, rejection, and isolation (Oberg, 1960). Being exposed to new values, attitudes, and behavior patterns is not necessarily debilitating, however; indeed, the experience can be transformative. In fact, some research shows that international students seem to be able to cope relatively well when faced with other stressful life events (Leong, Mallinckrodt, & Krolj, 1990; Parr & Others, 1992).

Friendship networks seem to be a critical factor in how well international students deal with stress (Furnham & Alibhai, 1985). Those who have a strong social support system tend to adjust to college life in their host country more quickly and effectively (Al-Sharideh & Goe, 1998; Boyer & Sedlacek, 1988; Schram & Lauver, 1988). International students indicate a stronger preference for making friends from the same country or students from other nations over students from the host county (Furnham & Alibhai, 1985). At the same time, those international students who do cultivate friendships with American students tend to adapt and adjust more easily (Bochner et al., 1977; Furnham & Alibhai, 1985).

Becoming accepted into an affinity group that offers social support is much more difficult for international students if few students are from their country or global region. Moreover, adapting to customs and mores of American society and campus life may conflict with aspects of the personal and cultural identity of international students (Furnham & Alibhai, 1985). As a result, those students are more likely to report feeling isolated and lonely, which can escalate into severe depression (Dillard & Chisolm, 1983; Mori, 2000; Owie, 1982; Schram & Lauver, 1988). In turn, this may dampen their participation in activities that contribute to important learning and personal development outcomes of college. One common coping mechanism is to focus more on academic achievement (Chu, Yeh, Klein, Alexander, & Miller, 1971; Dozier, 2001).

While it is plausible that international students channel their efforts toward academics to compensate for what may be a less than satisfying social life, the literature is silent on the extent to which they engage in other effective educational practices—activities that decades of research show are associated with high levels of learning and personal development (Chickering & Gamson, 1987; Ewell & Jones, 1993, 1996). In fact, relatively little is known about the extent to which international students are satisfied with their experience, interact with peers and faculty members, and participate in a variety of other educationally purposeful activities. Faculty members, academic and student life administrators, and institutional researchers need more information about what international students do in college in order to know whether and where to intervene to improve their experience and, in the process, enhance the quality of undergraduate education for all students.

Purpose of the Study

This study focuses on the extent to which international students engage in effective educational practices. Specifically, we compare the activities of international undergraduate students with American students in selected areas that research shows is related to student learning, personal development, and satisfaction with college, including the degree to which they perceive their campus to be supportive of academic and social needs. We also examine their self-reported gains in three domains: personal and social development, general education, and job-related skills.

Three questions guided the study:

1. To what extent are international students engaged in effective educational practices compared with their American counterparts? For

example, how much do the two groups read and write, study, interact with faculty members and peers, engage in diversity related activities, and so forth?

2. Does the ethnic background of international students shape student engagement, satisfaction, and gains?
3. Does the relative "density" of international students (i.e., the proportion of international students on a campus) affect how international and American students spend their time and the extent to which they are satisfied and make progress toward desired outcomes?

Methods

Instrument and Data Source

The College Student Report (Kuh, 2001a) was developed specifically for the National Survey of Student Engagement (*The NSSE 2000 National Report* [NSSE], 2000), an annual survey of first-year and senior students designed to measure the degree to which students participate in educational practices that prior research shows are linked to valued outcomes of college (Chickering & Gamson, 1987; Kuh, 2001b). Many of its 69 items have been employed in other collegiate surveys such as the College Student Experiences Questionnaire (CSEQ) and UCLA's Student Information Form (the CIRP survey of first-year students). *The College Student Report* measures student experiences in several areas: (a) involvement in different types of in-class and out-of-class activities; (b) amount of reading and writing; (c) participation in selected educational programs, such as study abroad, internships, and senior capstone courses; (d) perceptions of the campus environment, including the quality of students' relationships with peers, faculty members, and administrators; and (e) student satisfaction with academic advising and their overall collegiate experience. In addition, students estimate their educational, personal, and social growth and development in selected areas since starting college and provide background information, such as their sex, age, race/ethnicity, enrollment status, living arrangements, and major field. The psychometric properties of the survey instrument are discussed in detail by Kuh, Hayek, Carini, Ouimet, Gonyea, and Kennedy (2001).

The data used in this study were gathered in spring 2001 from 317 four-year colleges and universities. The final sample of first-year and senior students (n = 175,000) was randomly selected by the Indiana University Center for Survey Research, which administers the NSSE survey. The participating institutions mirror the universe of four-year colleges

and universities with respect to institutional type (as defined by the 2000 Carnegie Classification), sector, region, and urbanicity (NSSE, 2000). The NSSE survey was administered from late February through early June using both Web-based and paper surveys. The overall average adjusted response rate was 42%. NSSE did not provide incentives for survey completion.

The large sample scale afforded a rare opportunity to learn about the experiences of a group of students who typically comprise a very small fraction of the student body on most campuses. Almost all (97.2% or 308) of the 317 schools had international student respondents. Of the 71,260 first-year and senior undergraduate students who completed the survey at these institutions, about 4%, or 2,780, identified themselves as international students. This number compares favorably with the percentage reported in the *Digest of Educational Statistics* (2001). Of this group, 47% were first-year students and 53% were seniors, and 43% were men and 57% were women. Additional information about the biographical characteristics of the respondents (including ethnic background) is presented in Table 1.

Variable Specification and Analytic Strategy

We employed 8 measures of student engagement and 4 measures of selected student self-reported outcomes using combinations of 51 items. The 12 measures represent academic challenge; active and collaboration learning; student-faculty interaction; supportive campus environment; diversity experiences; community service; computer technology use; time spent socializing and relaxing; and student-reported gains in general education, in personal and social development, in job-related skills, and in student satisfaction. Appendix A contains the items from the NSSE survey that contributed to the 12 scales along with their internal reliabilities (Cronbach's alpha).[1]

The dependent variables are the 12 engagement scales. The independent variable is international student status type (coded as 1 = international student, 0 = American student). Control variables included student's sex, race/ethnicity, major, residential status, enrollment status, age, and parents' education, and the institution's Carnegie classification, total undergraduate enrollment, Barron's selectivity rating, and sector (private vs. public).

We analyzed the data separately for first-year and senior students because other research indicated that these two groups have distinct behavioral patterns (Feldman & Newcomb, 1969; Pascarella & Terenzini, 1991). We first examined international students' responses to the 12

TABLE 1

Selected Characteristics of International and American Students

Student/Institutional Characteristics	International Students N	%	American Students N	%
Age				
19 or younger	875	32.0	28,498	42.9
20-23	1,094	40.0	26,023	39.2
24-29	508	18.6	5,455	8.2
30-39	170	6.2	3,339	5.0
40+	91	3.3	3,141	4.7
Sex				
Male	1,196	43.0	22,994	34.3
Female	1,583	57.0	44,067	65.7
Class Rank				
Freshman/first year students	1,301	46.8	31,736	47.3
Seniors	1,479	53.2	35,336	52.7
Race/Ethnicity[a]				
Black	347	12.7	3,964	5.9
Asian	949	34.7	2,869	4.3
White	942	34.5	53,435	79.8
Latino	252	9.2	2,836	4.2
Place of Residence				
Off-campus	1,685	61.6	36,460	54.7
On-campus (Campus housing or Greek)	1,049	38.4	30,241	45.3
Transfer Status				
Started college from here	1,787	65.0	51,245	76.7
Started college from elsewhere	963	35.0	15,570	23.3
Enrollment Status				
Part-time	285	10.4	7,672	11.5
Full-time	2459	89.6	59,076	88.5
Parents' Education				
None of the parents went to college	1,091	40.3	26,904	40.7
Either mother or father went to college	610	22.5	16,938	25.6
Both parents went to college	1,007	37.2	22,339	33.8
Major[a]				
Humanities	277	10.4	8,171	12.7
Math & Sciences	930	35.0	15,047	23.4
Social Sciences	355	13.4	11,289	17.6
Pre-professional	957	36.0	27,136	42.2
Carnegie Type				
DRU Extensive	704	25.3	15,864	23.7
DRU Intensive	428	15.4	7,762	11.6
MA I & II	922	33.2	26,603	39.7
BA Liberal Arts	521	18.7	11,949	17.8
BA General	205	7.4	4,894	7.3
Sector				
Private	1,365	49.1	37,877	56.5
Public	1,415	50.9	29,195	43.5
Total	2,780	100.0	67,072	100.0

NOTE: [a] For race and major, the columns do not sum to 100.0 due to multiple or "other" responses.

scales. Then, we used *t* tests to see if the experiences of international students differed from American students on the scales. We computed effect sizes to gauge whether the magnitudes of mean differences were substantively important as well as statistically significant. Effect sizes were calculated by dividing each mean difference by the pooled standard deviation of the two comparison groups (Cohen, 1988; Greenwald, Hedges, & Laine, 1996; Light & Pillemer, 1982; Pascarella, Flowers, & Whitt, 2001). Various guidelines have been proposed for interpreting the magnitude of effect sizes (Alexander & Pallas, 1985; Cohen, 1988; Rosenthal & Rosnow, 1991). As suggested by some researchers, we considered an effect size of less than 0.10 to be substantively trivial, meaning the differences are too small to warrant consideration in making policy decisions (Alexander & Pallas, 1985; Rosenthal & Rosnow, 1991). In this study, an effect size larger than 0.10 was thought to be practically important and worthy of attention.

We then employed a series of regression analyses to contrast the scores of the two groups to account for the influence of potentially confounding background characteristics that other studies suggested could affect student engagement and satisfaction (Astin, 1993; Pascarella & Terenzini, 1991). Considering that our data consisted of students nested within institutions, we conducted regression analyses using both multilevel modeling and ordinary least squares (OLS) techniques. Where these techniques yielded similar patterns, we present the more familiar OLS-generated results. We provided *y*-standardized coefficients (the unstandardized regression coefficient divided by the pooled standard deviation) as effect sizes for the OLS Models (Greenwald, Hedges, & Laine, 1996; Light & Pillemer, 1982; Pascarella, Flowers, & Whitt, 2001).

Moreover, we used multilevel modeling to estimate the effects of international student density (the proportion of international students at each institution) on student engagement. In this analysis, we examined the intercept terms to determine if an increase in international student density affected student engagement. In particular, we modeled the intercept term to examine how density might be linked to adjusted institutional engagement means. In other words, we tested whether an increase in institutional density was associated with a change in institutional engagement.

Results

T-Test Comparisons

The independent *t* tests indicated that international first-year students scored higher than their American counterparts scored on level of academic challenge, active and collaborative learning, student-faculty

interaction, and technology use (see Table 2). They also reported making more progress in personal and social development, general education, and job-related skills. However, first-year international students spent less time relaxing and socializing and were less satisfied compared with American students.

Compared with Americans, senior international students were more engaged in academic work, used technology more frequently, and participated more frequently in diversity-related activities. They also reported greater gains in the personal and social development domain. They were not, however, as engaged in active and collaborative learning and community service and—like first-year international students—were less satisfied with their overall college experience. The one striking difference between first-year and senior international students was that seniors were comparable to their American counterparts in the amount of time they spent relaxing and socializing.

Multivariate OLS Regression

Table 3 presents the summary of OLS regression models. The independent variable is international student status and the dependent variables are the engagement, student gain, and satisfaction scales. The results show that after controlling for student-level and institutional-level characteristics, the basic patterns of engagement of international students were consistent with those revealed by the t tests. That is, first-year international students had significantly higher engagement scores in the following areas: academic challenge, student-faculty interaction, and computer technology use. They also reported greater gains in two of the major outcome domains—personal and social development and general education gains. Finally, as the t tests showed, international students spent considerably less time socializing and relaxing than American first-year students spent. However, after full controls were introduced, international students did not differ from American students in their satisfaction with college.

Most of the differences between senior international students and American students based on the *t*-test comparisons disappeared after the controls were introduced. Even then, though, senior international students reported higher gains in personal and social development and general education and less engagement in community service.

Interactions between International Status and Race/Ethnicity

It is possible that the observed differences between international and American students do not hold for all races and ethnicities. To test the

TABLE 2

Mean Differences between International and American Students on Engagement Measures and Selected Outcomes

Measure	First-year Students[a]					Seniors[b]				
	International		American		Effect	International		American		Effect
	Mean	Std. Dev.	Mean	Std. Dev.	Size	Mean	Std. Dev.	Mean	Std. Dev.	Size
Student Engagement										
Academic challenge	18.41	4.50	17.46	4.49	0.21***	18.98	4.74	18.53	4.67	0.10***
Active and collaborative learning	14.51	3.05	14.09	2.87	0.15***	15.53	3.11	15.82	3.02	-0.10***
Student interactions with faculty	8.13	3.75	7.10	3.77	0.27***	7.91	3.92	7.64	3.79	0.07
Supportive campus environment	11.10	3.34	10.88	3.34	0.06	10.38	3.59	10.19	3.36	0.06
Diversity	8.21	2.42	8.10	2.25	0.05	8.06	2.39	7.80	2.19	0.12***
Community service	4.28	2.03	4.32	1.82	−0.02	3.70	2.45	4.03	2.39	−0.14***
Computer technology	8.44	2.15	8.07	2.12	0.17***	8.95	2.05	8.66	2.09	0.14***
Relaxing and socializing	11.31	8.32	13.71	9.09	−0.26***	11.4	8.71	11.89	8.44	−0.06
Self-reported Gains										
Personal and social	14.69	3.49	13.86	3.55	0.23***	15.17	3.52	14.57	3.55	0.17***
General education	12.01	2.64	11.61	2.63	0.15***	12.61	2.58	12.53	2.57	0.03
Job-related skills	2.64	0.98	2.51	0.94	0.14***	2.97	0.94	3.01	0.91	−0.04
Satisfaction										
Student satisfaction	6.20	1.32	6.39	1.37	−0.14***	6.09	1.42	6.38	1.42	−0.20***

NOTE: ***$p < 0.001$ (2-tailed).

[a] Ns range from 722 to 1,282 for international students, Ns range from 16,018 to 31,552 for American students.

[b] Ns range from 1,156 to 1,464 for international students, Ns range from 30,926 to 35,145 for American students.

TABLE 3

OLS Multivariate Regressions of Engagement Measures and Selected Outcomes on International Status (International Students vs. American Students)[a]

Measure	First-year Students			Seniors		
	Unstandardized Regression Coefficient (Std. Error)	Effect Size[b]	Adjusted R^2	Unstandardized Regression Coefficient (Std. Error)	Effect Size[b]	Adjusted R^2
Student Engagement						
Academic challenge	0.723*** (0.138)	0.16	0.077	0.380 (0.133)	0.08	0.077
Active and collaborative learning	0.298 (0.089)	0.10	0.050	–0.193 (0.085)	–0.06	0.056
Student interactions with faculty	0.623*** (0.153)	0.17	0.075	0.288 (0.118)	0.08	0.081
Supportive campus environment	0.234 (0.103)	0.07	0.051	0.242 (0.096)	0.07	0.053
Diversity	0.012 (0.070)	0.01	0.046	0.120 (0.063)	0.05	0.037
Community service	–0.064 (0.066)	–0.04	0.076	–0.363***	–0.15	0.098
Computer Technology	0.248*** (0.066)	0.12	0.042	0.155 (0.059)	0.07	0.058
Relaxing and socializing	–1.430*** (0.280)	–0.16	0.043	–0.099 (0.237)	–0.01	0.072
Self-reported Gains						
Personal and social	0.698*** (0.111)	0.20	0.030	0.446*** (0.101)	0.13	0.055
General education	0.420*** (0.082)	0.16	0.040	0.279*** (0.072)	0.11	0.066
Job-related skills	0.088 (0.030)	0.09	0.024	–0.012 (0.026)	–0.01	0.055
Satisfaction						
Student satisfaction	–0.072 (0.042)	–0.05	0.045	–0.095 (0.040)	–0.07	0.040

NOTE: ***$p < 0.001$ (2-tailed).

[a]Controls include student-level controls (sex, race/ethnicity, major, campus residence, transfer status, enrollment status, age, parent education) and institutional-level controls (Carnegie classification, total undergraduate enrollment, Barron's rating of selectivity, private or public sector).

[b]Y-standardized coefficient.

robustness of the international status effects among different races/ethnicities, we examined interactions between international status and different races/ethnicities in supplementary analyses. We found that the international status effects reported in Table 3 generally held for different groups—that is, for Asians, Blacks, Latino/as, and Whites. An exception involves Asian students, wherein Americans scored higher than internationals on diversity and lower on relaxing and socializing.

Differences among International Students by Race and Ethnicity

Considering that college attendance is likely experienced and interpreted differently by international students depending on their national origin and culture, we examined whether engagement and educational outcomes of international students differed by race/ethnicity. We treated international student race/ethnicity as a proxy for their region of origin and cultural environment. Only those racial/ethnic groups that had a reasonable number of international student respondents were considered: Asian, White, and Black. The results are reported in Table 4.

The engagement patterns for a particular race were consistent for both first-year and senior international students. That is, compared to White and Black international students, Asian international students were less engaged in active and collaborative learning and diversity-related activities. They were also less satisfied with the quality of their campus environment than the other two groups. Conversely, Black students were more engaged than Asians were across multiple aspects of engagement

TABLE 4

Y-Standardized Effect Sizes for Different Races/Ethnicities among International Students

	Senior International Students[b]			First-year International Students[a]		
Measure	Asian vs. White	Black vs. White	Asian vs. Black	Asian vs. White	Black vs. White	Asian vs. Black
Student Engagement						
Academic challenge	–0.11	0.11	–0.21*	–0.09	0.21*	–0.26**
Active and collaborative learning	-0.27***	0.18	–0.46***	–0.19***	0.25**	–0.42***
Student interactions with faculty	0.18	0.50***	–0.33*	–0.06	0.23*	–0.25*
Supportive campus environment	–0.14	0.11	–0.28**	0.00	0.15	–0.15
Diversity	–0.24**	0.14	–0.39***	–0.18**	0.27**	–0.42***
Community service	0.04	0.30*	–0.30*	0.15*	0.45***	–0.27*
Computer Technology	0.10	0.09	–0.02	0.11	–0.06	0.22*
Relaxing and socializing	0.10	0.17	0.27**	0.16*	–0.32**	0.45***
Self-reported Gains						
Personal and social	0.12	0.12	–0.03	0.19**	0.17	–0.02
General education	–0.13	0.15	–0.29**	–0.06	0.35***	–0.35***
Job-related skills	–0.01	0.00	–0.08	–0.06	0.12	–0.20*
Satisfaction						
Student satisfaction	–0.50***	–0.24*	–0.24*	–0.33***	–0.16	–0.17

NOTE: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ (2-tailed).

[a]Ns range from 254 to 427 for Asians, 92 to 167 for Blacks, and 220 to 431 for Whites.

[b]Ns range from 397 to 515 for Asians, 131 to 176 for Blacks and 408 to 504 for Whites.

activities, except for computer technology and relaxing and socializing. Blacks also reported more gains in general education and had higher levels of satisfaction than Asian students had.

Compared with Whites, Black international students' engagement level differed by class. In the first year, Blacks were generally compatible to Whites, except for interacting more frequently with faculty members and performing more community service; in the senior year, however, Black students had higher engagement scores than Whites in almost all areas except for supportive environment, computer technology, and relaxing and socializing. White senior international students spent more time relaxing and socializing than Blacks.

Does Density Matter?

Given the importance of satisfying social relations to student success and the generally positive engagement pattern of international students, we examined whether the proportion of international undergraduates on a campus—international student density—influenced the overall level of student engagement at a school. Density data were obtained from the Integrated Postsecondary Education Data System (IPEDS) Fall 98 enrollment data file. The density of the international students ranged from 0% to 32% for the 317 institutions. The mean density of international students was about 2.4% for first-year students and 2.8% for seniors.[2]

The vast majority (95%) of the institutions had less than 8% international students in their populations. Such limited variability on the variable complicated the task of finding effects associated with changes of only a few percentage points over an entire student body. Because the international student density variable was dramatically skewed in the positive direction, we tested several different functional forms to represent the international student density variable. We first fitted a series of eight dummy variables that divided the density into different ranges; with some minor fluctuations, we found evidence of a general trend that can be modeled with a natural logarithm distribution. Therefore, we did the natural log transformation of density to dampen the effects of the few outlying schools that had more than 20% international students.

The transformed density variable is approximately normally distributed. Supplementary analyses showed that a linear specification of density variable yielded similar patterns to those specified with natural logarithm transformation. We introduced the transformed density variable into the multilevel models. Table 5 presents the intraclass correlations of the engagement scale—that is, the proportion of variance explained by between-institution variables. In our study, the institutional level vari-

ables explained 3% to 17% overall variance for first-year students and 4% to 11% for seniors. This small amount of variance explained by between-institution variables is not unusual (Pascarella & Terenzini, 1991). Table 6 presents multilevel regression coefficients and effect sizes of the density of international students regressed on the student engagement scales.

As expected, international student density had positive effects on diversity-related experiences. In fact, both first-year and senior international students reported more diversity-related activities as the percentage of international students on campus increased. One inexplicable finding was that the greater the density of international students, the lower the institution's score on the NSSE supportive campus environment benchmark. In supplementary analyses (not shown in tabular form) of international and American students separately, density had essentially the same effects on engagement for both groups.

Limitations

This study has several limitations. First, although the institutions from which the student sample is drawn are generally representative of the universe of four-year colleges and universities, schools that administer the NSSE elect to do so. If students from other schools were included, the results might differ in some unknown ways.

TABLE 5
Intraclass Correlation Coefficients for Engagement Measures

	First-year Students			Seniors		
Measure	Between School Variance	Within School Variance	Intraclass Correlation	Between School Variance	Within School Variance	Intraclass Correlation
Student Engagement						
Academic challenge	2.036	17.586	0.10	1.528	19.481	0.07
Active and collaborative learning	0.647	7.599	0.08	0.476	8.585	0.05
Student interactions with faculty	1.353	6.685	0.17	1.287	11.490	0.10
Supportive campus environment	0.869	10.113	0.08	0.949	10.197	0.09
Diversity	0.382	4.672	0.08	0.355	4.413	0.07
Community service	0.389	2.403	0.14	0.556	4.632	0.11
Computer Technology	0.403	4.080	0.09	0.330	3.988	0.08
Relaxing and socializing	2.469	78.612	0.03	3.019	67.876	0.04

TABLE 6

Multilevel Regressions of Student Engagement Measures on International Student Density and Selected Controls[a]

Measure	First-year Students		Seniors	
	Unstandardized Coefficient (Std. Error)	Effect Size[b]	Unstandardized Coefficient (Std. Error)	Effect Size[b]
Student Engagement				
Academic challenge	−0.098 (.056)	−0.08	−0.038 (.047)	−0.03
Active and collaborative learning	−0.012 (.032)	−0.02	−0.023 (.028)	−0.04
Student interactions with faculty	−0.022 (.045)	−0.02	−0.093* (.039)	−0.09
Supportive campus environment	−0.150*** (.038)	−0.18	−0.163*** (.039)	−0.19
Diversity	0.086** (.030)	0.15	0.085** (.030)	0.16
Community service	−0.023 (.030)	−0.04	−0.052 (.033)	−0.08
Computer Technology	−0.012 (.028)	−0.02	−0.018 (.023)	−0.04
Relaxing and socializing	0.006 (.080)	0.00	−0.067 (.068)	−0.04

NOTE: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ (2-tailed).

[a]Student-level controls (sex, race/ethnicity, major, campus residence, transfer status, enrollment status, age, parent education) and institutional-level controls (Carnegie classification, total undergraduate enrollment, Barron's rating of selectivity, private or public sector).

[b]Y-standardized effect sizes, indicating the effect of density on adjusted institutional engagement means.

Second, the only precollege variable we were able to take into account in the analyses was parental education level. Motivation, language proficiency, and academic preparation may also affect the college experiences of both international and American students.

Third, although finding good fitting prediction models is not the purpose of this study, the models employed in the study have relatively low *R*-square; that is, the independent variables and the control variables together only explained a small portion of the variances of engagement measures. There might be other variables that have significant effects on engagement activities and that are not included in the models.

Finally, international students from different cultures and nations may differ in ways that also affect student engagement. Other research suggests that international students from countries with cultures that are somewhat similar to the host culture tend to adapt more easily than students who come from very different cultural backgrounds (Gudykunst & Hammer, 1988; Olaniran, 1996). In addition, European students and non-European students differ in their adaptation, acculturation, and satis-

faction with the college experience when studying in foreign countries (Sam, 2001; Schram & Lauver, 1988). Unfortunately, we did not have specific information about students' country of origin in order to examine this issue. We explore the possibility of differences within the international student respondent group further using international student racial/ethnic background as a proxy for region of origin. Though we found some differences among international students by race/ethnicity, international status effects on student engagement patterns reported earlier were generally robust within different racial/ethnic groups (interaction effect). The lone exception was for Asian students and diversity experiences. Perhaps the Asian student culture of orientation is inherently more sociable with people within the same cultural group than with people from other cultural groups or American students. This view is consistent with previous research on international student friendship network patterns (Furnham & Alibhai, 1985). Further study needs to be done to explore the group differences within the international student population.

Discussion

The findings from this study indicate that international students are more engaged in some areas than American students are—particularly in the first year of college—and less engaged in others. First-year international students surpassed their American counterparts in levels of academic challenge and student-faculty interaction. They also reported greater gains across the board in personal and social development and general education. In addition, consistent with other studies (Scott, 1997), first-year international students used computer technology more frequently in course learning activities. Channeling their energies and efforts through technology into academic work is one area over which international students have some control and can immediately experience success (Chu et al., 1971; Dozier, 2001). It is also possible international students are more comfortable and confident using computer technology, for preparing class assignments as well as for communicating with their instructors and other students. Although technology may help ease the transition to the American college campus, it may also play a part in social isolation if it substitutes for face-to-face interaction (Parr & Others, 1992). That is, international students may use technology instead of talking directly to peers or instructors to avoid embarrassing exchanges created by language barriers and unfamiliarity with cultural idiom. Perhaps one explanation for why technology use decreases over time is that students have more face-to-face interaction with peers through socializing and, thus, use technology less for that purpose.

By their senior year, international students tend to be more adapted to the cultural milieu and generally do not differ from American seniors in their patterns of student engagement, including time spent socializing and relaxing. There are two notable exceptions. The first is community service, an activity that may not have a clear definition to many international students. That said, creative programs targeted to issues that concern international students might be seen as attractive, particularly if "community" is defined in global terms. Another exception is in the area of personal and social development and general education gains, where international students report making more progress than American students do. This is not surprising, certainly, as living in a foreign land presents continual challenges to virtually every aspect of one's personhood.

Because international students devote more effort to academics, it would seem that a critical mass of international students on campus would have uniformly positive effects on other aspects of student engagement, including perceptions of the campus environment. This is the case with regard to diversity-related activities, as both international students and American students report more experience with diversity as the proportion of international students on campus increases. However, for some reason, as the proportion of international students increases, both groups perceive their campus to be *less*, not more, supportive. This is counterintuitive, especially for American students. Perhaps international students perceive their campus as less supportive as density increases because of negative amplification (Weick, 1979), a situation where focusing on a disappointment in the company of others leads to interpreting other generally neutral or ambiguous aspects of a group's experience also as disappointing or frustrating. That is, when more international students are present, they are more likely to have friends with similar interests with whom they talk openly about their experiences at the institution. There are many ways colleges and universities can disappoint or frustrate students; the longer one is in school, the more likely it is to encounter difficulties in registering for classes, to get parking tickets, to have trouble seeing an advisor, and so forth. Such disappointments and frustrations are more likely to be expressed and, perhaps, grow in magnitude (even out of proportion) when students hear their peers saying similar things. Why American students react in the same way is more puzzling and warrants additional research.

Implications

The findings of this study have four immediate implications for higher education policy and practice. First, institutional researchers,

assessment teams, and others who share responsibility for monitoring the quality of student life should determine the extent to which the international student experiences on their campus are similar to or different from these findings. Different mixes of students, curricular requirements, and campus cultures could produce varying patterns of engagement that deviate from the results of this study. In addition, given the limited amount of research on the experiences of international students, many other instructive questions could be asked. For example, do certain types of early socialization activities (e.g., special intensive orientation sessions, summer bridge programs) facilitate a successful transition to study in the United States? Are certain housing arrangements more conducive to satisfactory adjustment, such as pairing students from the same country as roommates or assigning them to the same building? Do international students and American students benefit equally from these or other interventions?

Second, a campus cannot simply recruit a critical mass of international students; it must also intentionally arrange its resources so that international and American students benefit in desired ways from one another's presence. On the one hand, increasing the number of international students on campus makes it more likely that students from different parts of the world can find peers with similar backgrounds and interests, allowing them to more readily form affinity groups that are the foundation for a social support system. However, simply increasing the number of international students will not necessarily enhance the quality of many aspects of the undergraduate experience, as shown by the research on structural diversity (Chang, 2002; Gurin, 1999). Thus, any effort to increase the numbers of international students on a campus must also be accompanied by programs and services that induce these students and their American counterparts to engage with one another as well as in other educationally purposeful activities.

Third, the potentially negative effects of both high and low density should be further investigated and monitored by campus officials who work with international students. Low density may contribute to social isolation and an overcompensation on academics. High density could contribute to an inordinate amount of socializing by members of some groups, which can have an adverse affect on academic performance. Helping international students achieve the appropriate balance is the goal. Research on international student friendship patterns suggests that international students prefer friends who are from the same country or region of the world, even though socializing with American students tends to enrich the overall quality of their experience (Furnham & Alibhai, 1985; Gudykunst & Hammer, 1988). Additional studies are needed to understand how and why density affects student engagement on

campuses, especially the counterintuitive finding that all students view campuses with high proportions of international students as less supportive than those with low proportions.

Finally, additional research is needed to determine the factors that contribute to Asian students spending more time socializing and less time participating in diversity-related college activities than their counterparts from other countries do. One possible explanation for this behavior is that Asian students come from cultures where spending time with friends is highly valued (Furnham & Alibhai, 1985), but why they interact less with people from other backgrounds and cultures is not clear.

Assuming institutions view these as legitimate concerns, faculty members could be encouraged to promote the mingling of Asian international students with students of different cultures or backgrounds in group study and collaborative projects. Student affairs personnel might focus on designing programs and activities to bring Asian students into contact with students from other backgrounds. Most campuses, for example, sponsor celebrations of different cultures. Special efforts could be made to involve leaders from the Asian student community and organizations to be involved in the planning of such events and to use their social influence to encourage their Asian peers to participate.

Conclusion

The results of this study reveal previously unknown aspects of the undergraduate experience of international students, including their engagement in activities that contribute to high levels of learning and personal development. With some exceptions, international students generally are more engaged in educationally purposeful activities than their American counterparts are, especially in the first year of college. They also report gaining more in areas that represent desired outcomes of college. By the senior year, international students are more like American students in terms of their engagement patterns.

Faculty members and academic and student affairs administrators can use the findings of this study to better understand, advise, and assist international students in making a successful transition to college life in the U.S. and in finding ways to get involved in a range of educationally productive activities that will help the students attain their educational goals in a satisfying manner. In addition, institutions with large numbers of international students should systematically assess the experiences of various subgroups of international students, such as Asian students, to be sure that they are investing an appropriate amount of time and energy in educationally purposeful activities.

APPENDIX A

Survey Items Contributing to Student Engagement and Selected Student Outcome Measures

Academic Challenge (Cronbach's alpha = 0.72)

- Number of hours per week spending on preparing for class (studying, reading, writing, rehearsing, and other activities related to your academic program)
- The frequency of having worked harder than you thought you could to meet an instructor's standards or expectations during the current school year
- Number of assigned textbooks, books, or book-length packs of course readings during the current school year
- Number of written papers or reports of 20 pages or more during the current school year
- Number of written papers or reports between 5 and 19 pages during the current school year
- Number of written papers or reports of fewer than 5 pages during the current school year
- During the current school year, the extent coursework emphasized analyzing the basic elements of an idea, experience, or theory
- During the current school year, the extent coursework emphasized synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships
- During the current school year, the extent coursework emphasized making judgments about the value of information, arguments, or methods
- During the current school year, the extent coursework emphasized applying theories or concepts to practical problems or in new situations
- The extent the institution emphasizes spending significant amounts of time studying and on academic work

Active and Collaborative Learning (Cronbach's alpha = 0.64)

- The frequency of having asked questions in class or contributed to class discussions during the current school year
- The frequency of having made a class presentation during the current school year
- The frequency of having worked with other students on projects during class during the current school year
- The frequency of having worked with classmates outside of class to prepare class assignments during the current school year
- The frequency of having tutored or taught other students (paid or voluntary) during the current school year
- The frequency of having discussed ideas from your readings or classes with others outside of class (students, family members, coworkers, etc.) during the current school year

Student Interactions with Faculty Members (Cronbach's alpha = 0.74)

- The frequency of having discussed grades or assignments with an instructor during the current school year
- The frequency of having talked about career plans with a faculty member or advisor during the current school year
- The frequency of having discussed ideas from your readings or classes with faculty members outside of class during the current school year
- The frequency of having worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.) during the current school year
- The frequency of having received prompt feedback from faculty on your academic performance (written or oral) during the current school year
- Have done or plan to work on a research project with a faculty member outside of course or program requirements before you graduate from your institution

Supportive Campus Environment (Cronbach's alpha = 0.76)

- The extent the institution emphasizes providing the support you need to help you succeed academically
- The extent the institution emphasizes helping you cope with your non-academic responsibilities (work, family, etc.)
- The extent the institution emphasizes providing the support you need to thrive socially
- Quality of Relationships with other students at your institution

APPENDIX A (*Continued*)

Survey Items Contributing to Student Engagement and Selected Student Outcome Measures

- Quality of Relationships with faculty members at your institution
- Quality of Relationships with administrative personnel and offices at your institution

Gains in Personal and Social Development (Cronbach's alpha = 0.82)

- The extent your college experience contributed to developing a personal code of values and ethics
- The extent your college experience contributed to understanding people of other racial and ethnic backgrounds
- The extent your college experience contributed to understanding yourself
- The extent your college experience contributed to learning effectively on your own
- The extent your college experience contributed to working effectively with others
- The extent your college experience contributed to acquiring broad general education
- The extent your college experience contributed to thinking critically and analytically

Gains in General Education (Cronbach's alpha = 0.80)

- The extent your college experience contributed to writing clearly and effectively
- The extent your college experience contributed to speaking clearly and effectively
- The extent your college experience contributed to acquiring broad general education
- The extent your college experience contributed to thinking critically and analytically

Gains in Job-Related Skills (Single item)

- The extent your college experience contributed to acquiring job or work-related knowledge and skills

Computer Technology (Cronbach's alpha = 0.55)

- The frequency of having used an electronic medium (list-serv, chat group, Internet, etc.) to discuss or complete an assignment during the current school year
- The frequency of having used e-mail to communicate with an instructor during the current school year
- The extent your college experience contributed to using computing and information technology

Diversity (Cronbach's alpha = 0.63)

- The frequency of having had serious conversations with students of a different race or ethnicity than your own during the current school year
- The frequency of having had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values during the current school year
- The extent the institution emphasizes encouraging contact among students from different economic, social, and racial or ethnic backgrounds

Community Service (Cronbach's alpha = 0.51)

- The frequency of having participated in a community-based project as part of a regular course during the current school year
- Have done or plan to do community service or volunteer work before you graduate
- The extent your college experience contributed to improving the welfare of your community

Relaxing and Socializing (Single item)

- Number of hours per week spending on relaxing and socializing (watching TV, partying, exercising, playing computer and other games, etc.)

Student Satisfaction (Cronbach's alpha = 0.77)

- How would you evaluate your entire educational experience at this institution?
- If you could start over again, would you go to the same institution you are now attending?

Notes

[1]All scales were created by equally weighting, and then summing responses to appropriate items. Scales for *academic challenge and student-faculty interaction* were comprised of items with different response sets; we equalized the minimum and maximum responses for each contributing item prior to creating each of these scales.

[2]The density median is 1.6% for first-year students and 1.8% for seniors.

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