

BEING (DIS)ENGAGED IN EDUCATIONALLY PURPOSEFUL ACTIVITIES: THE INFLUENCES OF STUDENT AND INSTITUTIONAL CHARACTERISTICS

Shouping Hu* and George D. Kuh†

.....

The self-reported experiences of 50,883 undergraduates at 123 institutions were analyzed using a multinomial hierarchical model to identify individual and institutional characteristics associated with varying levels of student engagement in educationally purposeful activities. Parental education and student academic preparation were positively associated with higher levels of engagement. White students were generally less engaged than students from other racial and ethnic groups whereas men were more likely to be either disengaged or highly engaged compared with women. Students at public institutions and research universities were less engaged than their counterparts at private colleges and other institutional types. Individual student perceptions of certain aspects of the institutional environment affected engagement in complicated ways.

.....

KEY WORDS: educational disengagement; educational engagement; college student; multinomial hierarchical model.

INTRODUCTION

The most important factor in student learning and personal development during college is student engagement, or the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes (Astin, 1993; Pascarella and Terenzini, 1991). Among the more important of these are the amount of time they study, interact with faculty members and peers related to substantive topics, and use institutional resources such as the library and technology (Astin, 1993; Chickering and Reisser, 1993; Kuh, Schuh, White, and Associates, 1991; Pascarella and Terenzini, 1991). Perhaps the best known set of engagement indicators is the “Seven Principles for Good

*Shouping Hu, Seton Hall University. George D. Kuh, Indiana University.

†Address correspondence to: Shouping Hu, Department of Educational Administration and Supervision, College of Education and Human Services, Seton Hall University, 400 South Orange Avenue, South Orange, NJ 07079. E-mail: hushoupi@shu.edu

Practice in Undergraduate Education” (Chickering and Gamson, 1987). These principles include student–faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning. All are positively related to student satisfaction and achievement on a variety of dimensions (Astin, 1985, 1993; Bruffee, 1993; Goodsell, Maher, and Tinto, 1992; Johnson, Johnson, and Smith, 1991; McKeachie, Pintrich, Lin, and Smith, 1986; Pike, 1993; Sorcinelli, 1991). It follows, then, that educationally effective colleges and universities are those that channel students’ energies toward appropriate activities and engage them at a high level in these activities (Education Commission of the States, 1995; National Survey of Student Engagement, 2000; The Study Group on the Conditions of Excellence in American Higher Education, 1984).

Some recent studies suggest that large numbers of college students appear to be either academically or socially disengaged, or both. Flacks and Thomas (1998) lamented what they discerned is an emerging “culture of disengagement” enveloping students at the University of California at Santa Barbara. This was particularly evident among White students and students from more affluent families who consumed large quantities of alcohol. Kuh, Hu, and Vesper (2000) found that a substantial fraction of the more than 50,000 students at 128 colleges and universities in their study were not engaged at meaningful levels in educationally purposeful activities. About 18% of all students qualified for the label of “disengaged,” defined as scoring well below average on the scales from the College Student Experiences Questionnaire (CSEQ) that represent effort devoted to educationally purposeful activities.

PURPOSE

Relatively little is known about the characteristics of students who are disposed toward disengagement or institutional features that are linked with disengagement. That is, although the good educational practices correlated with engagement are well documented (Chickering and Gamson, 1987; National Survey of Student Engagement, 2000), a lacuna exists in our understanding of what is associated with disengagement. In order for institutions to enhance the overall quality of undergraduate education for all students, we must identify and better understand how student and institutional characteristics interact to encourage or discourage student engagement in educational purposeful activities in college.

Two research questions guide this study. First, what student characteristics differentiate the most engaged and most disengaged students from the majority of undergraduates who are “average” in terms of their patterns and frequency of engagement in various activities during college? Second, what institutional characteristics are linked to high and low levels of student engagement in educationally purposeful activities?

METHODS

Data Source and Instrument

The data used in this study are from the College Student Experiences Questionnaire (CSEQ) Research Program at Indiana University. Since 1979, more than 400 4-year colleges and universities have used the CSEQ to assess the quality of the undergraduate experience, resulting in about 300,000 student records. The third edition of the CSEQ (Pace, 1990a) includes items concerning background information about respondents (age, race, gender, place of residence, parent educational level, employment status, enrollment status, major) and about their experiences in three areas: (a) the amount of time and energy (effort) they devoted to various activities (14 Activities scales totaling 138 items plus items about amount of reading, writing, and studying), (b) their perceptions of important dimensions of their institution's environment (8 Environment items), and (c) what they gained from attending college (23 Estimate of Gains items). All of the questions on the CSEQ tap student behaviors that are highly correlated with desired learning and noncognitive outcomes. The questionnaire requires that students reflect on what they are putting into and getting out of their college experience. For example, the Estimate of Gains items ask students how much they think their college or university experience contributed to their own growth and development. In this sense, the progress that students say they make is a value-added judgment (Pace, 1990b).

As with all survey questionnaires, the CSEQ relies on self-reports from students. Examinations of the validity of self-reports (Baird, 1976; Lowman and Williams, 1987; Pace, 1985; Pike, 1989, 1995; Pohlman and Beggs, 1974; Turner and Martin, 1984) indicate that they are generally valid under five conditions:

1. if the information requested is known to the respondents,
2. the questions are phrased clearly and unambiguously (Laing, Sawyer, and Noble, 1988),
3. the questions refer to recent activities (Converse and Presser, 1989),
4. the respondents think the questions merit a serious and thoughtful response (Pace, 1985), and
5. answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in socially desirable ways (Bradburn and Sudman, 1988).

CSEQ items satisfy all these conditions.

Student responses to Activities and Gains items are approximately normally distributed and the psychometric properties of the instrument indicate it is reliable (Ewell and Jones, 1996; Kuh, Vesper, Connolly, and Pace, 1997). CSEQ Estimate of Gain scores are generally consistent with evidence of actual gains,

such as results from achievement tests (Pace, 1985; Pike, 1995). For example, Pike found that student reports of their experiences using the CSEQ were positively correlated with relevant achievement test scores. Further, studies indicated that student self-reported gains could be considered as proxies for outcome measures, although they cannot substitute for traditional achievement measures such as standardized tests (Anaya, 1999; Pike, 1996, 1999).

Sample

The sample for this study was composed of 50,883 full-time enrolled undergraduate students who completed all items on the CSEQ between 1990 and 1998 at 123 institutions offering at least a baccalaureate degree¹: 21 research universities (RUs), 14 doctoral universities (DUs), 41 comprehensive colleges and universities (CCUs), 16 selective liberal arts colleges (SLAs), and 31 general liberal arts colleges (GLAs). Fifty-eight percent were attending state-assisted schools, 29% were at RUs, 10% DUs, 36% CCUs, 9% SLAs, and 16% GLAs, as classified by The Carnegie Foundation for the Advancement of Teaching (1994). Sixty-one percent were women and 83% were White, 3% American Indian or did not report their ethnic identity, 7% Asian or Pacific Islander, 5% African American, and 2% Hispanic. Approximately 37% were first-year students, 20% sophomores, 16% juniors, and 28% seniors. Approximately 43% were majoring in an applied field (e.g., education, health-related, business), 17% in social sciences, 22% in mathematics, science, or a related area (engineering, computer science), and 14% in the humanities (including the arts and foreign languages), with about 5% undecided as to major field.

Because data from a 9-year period are used, it is possible that student cohorts may have changed over time in ways that affect engagement. To examine the possibility, we divided the sample into three groups: 1990–1992 respondents (24% of the sample), 1993–1995 respondents (31%), and 1996–1998 respondents (46%).

Variables

Kuh et al. (2000) identified ten types of students: individualist, grind, disengaged, intellectual, scientist, socializer, artist, recreator, collegiate, and conventional. The “disengaged” and the “intellectuals” anchored the low and high ends of the engagement continuum. The differences in the amount of educational effort put forth and self-reported gains for the remaining eight types of students were small in magnitude so as to be trivial in practical terms, even though their patterns of engagement in college activities were distinctive from each another. Because we are primarily concerned in the factors related to being highly engaged or disengaged in college, the remaining eight types of students were com-

bined to form one group named “typical.” The membership of the intellectual and disengaged groups is intact, but we renamed the “intellectual” group the “engaged.” Thus, all students were assigned to one of three membership groups (disengaged, typical, and engaged) based on their engagement scores that were derived from their responses to the CSEQ activities scales (Kuh et al., 2000). There are several advantages to using engagement group membership as the outcome measure in contrast to using a single aggregate engagement score. Previous studies have shown that both the quantity and the quality of effort contribute to student gains from college (Pascarella and Terenzini, 1991). Using one total engagement measure may mask important aspects of student engagement. In addition, the student groupings used in this study to create the engagement groups have been empirically tested and are strongly related to student self-reported gains (Kuh et al., 2000).

The outcome variable in this study is the three membership groups (disengaged, typical, and engaged). All students were assigned to one of three groups as described earlier and coded as disengaged = 1, engaged = 2, and typical = 3.²

Both individual and institutional variables were used to predict student membership in the three groups. Family background and student ability are highly correlated and affect college outcomes (Pascarella and Terenzini, 1991). For this reason, two control variables were created: student parental education and academic preparation. Academic preparation was represented by the sum of student self-reported grades and an item about educational aspirations. Student sex, race and ethnicity, major field, institutional type, and year in college were coded as dummy variables. To account for the influence of individual student perceptions of the institutional environment on engagement group membership, we used three aggregated measures that are produced by a factor analysis of students' responses to the eight CSEQ Environment items. These factor scores represent the extent to which students perceive their school (a) emphasizes scholarly and intellectual activities, (b) manifests congenial relations among faculty, students, and administrators, and (c) emphasizes acquiring vocational and practical competencies (Kuh et al., 1997). Institutional type, selectivity, and control (public, private) were also included in all analyses with the selectivity measures taken from *Barron's Profiles of American Colleges* (1996). The coding of variables for individual and institutional characteristics is shown in Table 1.

Statistical Model and Data Analysis

Because we seek to determine the effects of both student and institutional characteristics on student engagement, hierarchical linear modeling (HLM; Bryk and Raudenbush, 1992; Ethington, 1997, 2000) was the preferred analytical approach. All student-level continuous variables were standardized as z scores ($M = 0$, $SD = 1$), centered on the grand-mean of the sample of students. Institu-

TABLE 1. Coding and Description of Variables in Original Measurement

Variable	Description
Student-level variables ($N = 50,883$)	
Gender	
Men	A dummy variable (Yes = 1, No = 0)
(Women)	Reference group
Race/ethnicity	
American Indian and Other	A dummy variable (Yes = 1, No = 0)
Asian or Pacific Islander	A dummy variable (Yes = 1, No = 0)
African American	A dummy variable (Yes = 1, No = 0)
Hispanic	A dummy variable (Yes = 1, No = 0)
(White)	Reference group
Parental education	
Parental education	Parental education level, ranging from 1 to 3.
Academic preparation	
Academic preparation	Sum of college grades and educational aspirations, ranging from 2 to 7
Major field	
Humanities	A dummy variable (Yes = 1, No = 0)
Math and sciences	A dummy variable (Yes = 1, No = 0)
Social sciences	A dummy variable (Yes = 1, No = 0)
Undecided	A dummy variable (Yes = 1, No = 0)
(Pre-professional)	Reference group
Year in college	
Sophomore	A dummy variable (Yes = 1, No = 0)
Junior	A dummy variable (Yes = 1, No = 0)
Senior	A dummy variable (Yes = 1, No = 0)
(First-year student)	Reference group
Cohort	
Cohort 1990–92	A dummy variable (Yes = 1, No = 0)
Cohort 1996–98	A dummy variable (Yes = 1, No = 0)
(Cohort 1993–95)	Reference group
Individual perception	
Perceptions of scholarly and intellectual emphasis	Scholarly and intellectual emphasis, ranging from 3 to 21
Perceptions of quality of personal relations	Emphasis on quality of personal relations, ranging from 3 to 21
Perceptions of vocational and practical emphasis	Vocational and practical emphasis, ranging from 2 to 14
Institution-level variables ($N = 123$)	
Institutional control	
Public	A dummy variable (Yes = 1, No = 0)
(Private)	Reference group

TABLE 1. (Continued)

Selectivity	
Institutional selectivity	Selectivity measure from Barron's, ranging from 1 to 6
Institutional type	
DU	A dummy variable (Yes = 1, No = 0)
CCU	A dummy variable (Yes = 1, No = 0)
SLA	A dummy variable (Yes = 1, No = 0)
GLA	A dummy variable (Yes = 1, No = 0)
(RU)	Reference group
Aggregate environment measures	
Scholarly and intellectual emphasis	Scholarly and intellectual emphasis, aggregated to institutional level, ranging from 13.67 to 18.94
Quality of personal relations	Emphasis on quality of personal relations, aggregated to institutional level, ranging from 12.94 to 18.18
Vocational and practical emphasis	Vocational and practical emphasis, aggregated to institutional level, ranging from 6.84 to 11.84

tion-level continuous variables were also standardized as z scores ($M = 0$, $SD = 1$), centered on the grand-mean of the sample of institutions. Because the outcome variables were categorical and multiple in nature, a nonlinear HLM model (multinomial HLM) was estimated with both individual and institutional characteristics were treated as predicting variables.

In this model, institutional characteristics were assumed to have a direct effect on student membership in different groups after controlling for individual student characteristics. The student-level model was estimated by:

$$\ln\left(\frac{P(\text{Disengaged})}{P(\text{Typical})}\right) = \beta_{01} + \beta_{11}X_1 + \beta_{21}X_2 + \cdots + \beta_{p1}X_p + \varepsilon_1, \text{ and} \quad (1)$$

$$\ln\left(\frac{P(\text{Engaged})}{P(\text{Typical})}\right) = \beta_{02} + \beta_{12}X_1 + \beta_{22}X_2 + \cdots + \beta_{p2}X_p + \varepsilon_2, \quad (2)$$

where X represents student characteristics such as gender, race or ethnicity, academic preparation, and so on, and the coefficients of X represent how student characteristics affect membership of engagement (Raudenbush, Bryk, Cheong, and Congdon, 2000).

$$\beta_{01} = \gamma_{010} + \gamma_{011}Z_1 + \gamma_{012}Z_2 + \cdots + \gamma_{01q}Z_q + v_{01} \quad (3)$$

$$\beta_{02} = \gamma_{020} + \gamma_{021}Z_1 + \gamma_{022}Z_2 + \cdots + \gamma_{02q}Z_q + v_{02} \quad (4)$$

where Z represents institutional characteristics such as institutional type, selectivity, environment, and so forth, and the coefficients of Z represent how institutional characteristics affect student effort.

In the individual student-level model, we controlled for such student background characteristics as sex, race and ethnicity, major field, class level, student parental education, and academic preparation. As mentioned earlier, all the student-level variables were centered around the grand-mean for the sample, which allowed us to interpret the intercept as the mean outcome for each institution, adjusted for student characteristics in each institution (Bryk and Raudenbush, 1992).

In the institution-level model, two sets of variables were analyzed. The first set was composed of the five types of 4-year colleges and universities—RUs, DUs, CCUs, SLAs, and GLAs (The Carnegie Foundation for the Advancement of Teaching, 1994). The second set of variables was composed of three aggregate measures of the environment mentioned earlier: scholarly and intellectual emphasis, vocational and practical emphasis, and quality of personal relations (Kuh et al., 1997). In addition, institutional selectivity and institutional control were also included when estimating how well the two sets of institutional characteristics predicted student membership in three groups.

RESULTS

Table 2 reports the characteristics of the students assigned to the three groups (disengaged, typical, and engaged). The largest group by definition is the typical with more than three fourths of the students (76.4%), followed by the disengaged (18.2%) and the engaged (5.4%) groups.

Since standardized z scores were reported for continuous variables in Table 2, anything above or below 0 means the scores for that variable is above or below the average score for the sample. Therefore, it appears that student engagement was positively influenced by parental education, academic preparation, and individual student perceptions of the campus environment; that is, students whose parents had more education, who had better academic preparation, and who perceived the environment more positively were more engaged (they were less likely to be in the disengaged group and more likely to be in the typical or engaged groups). This trend also holds for institutional-level variables, such as institutional selectivity and the aggregated environment measures, with the exception of the vocational and practical emphasis environment measure.

Table 2 also shows that women made up a smaller proportion of disengaged

students relative to the typical and engaged groups. White students consisted of a smaller proportion of the engaged group, and larger proportions of American Indians, African Americans, and Hispanics were in the engaged group. The pattern for Asian students was similar to that of White students. The percentage of students in pre-professional majors decreased moving along the continuum from the disengaged to the engaged, as did the percentage for the undecided majors. However, the reverse trend appears to be true for students in humanities and social sciences. There was no clear trend for students in math and sciences. The largest percentages of first-year and sophomore students were in the disengaged group and smaller fractions in the engaged group. The pattern was reversed for juniors and seniors. No discernable differences emerged when examining the percentages of students assigned to the engagement groups in the three different student cohorts (1990–1992, 1993–1995, and 1996–1998).

The descriptive statistics at institutional level for categorical variables showed that students at private colleges and universities made up almost 30% of the disengaged, 44% of the typical, and 57% of the engaged. Larger fractions of students at SLAs and GLAs were in the engaged and typical groups and a smaller fraction in the disengaged group. Conversely, greater numbers of RU and CCU students were in the disengaged and typical groups.

The multinomial HLM model identifies the effects of student and institutional characteristics on student membership in the three groups, while holding other variables constant. Specifically, this analysis indicates how student and institutional characteristics are related to student membership in the disengaged group and engaged group in contrast to membership in the typical group. Table 3 reports both the coefficient estimates and the odds ratio. The odds ratio was calculated to compare membership in the disengaged group relative to membership in the typical group and to compare membership in the engaged group to the typical group (Raudenbush, Bryk, Cheong, and Congdon, 2000).

First, we report the HLM results comparing students in the disengaged group with their counterparts in the typical group. All else being equal, men were more likely than women to be in the disengaged group. African American students were less likely than White students to be disengaged; students from other racial and ethnic groups did not differ significantly from White students. The higher the student's parental educational level and the better the academic preparation, the less likely the student was to be in the disengaged group. Students undecided about their majors were more likely to be disengaged compared with students in other majors and pre-professional fields. Sophomores, juniors, and seniors were less likely to be disengaged compared with first-year students. Students from the 1990 to 1992 cohort were less likely to be in the disengaged group, whereas students from 1996 to 1998 were not significantly different from the 1993 to 1995 cohort. Also, students were less likely to be in the disengaged group if they perceived that their institution emphasized scholarship and intel-

TABLE 2. Unadjusted Descriptive Statistics on Student and Institutional Variables for All Sample and by Student Type

Variables	All		Disengaged		Typical		Engaged	
	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD
Student-level								
Gender								
Men	39.0%		49.0%		36.8%		36.8%	
(Women)	61.0%		51.0%		63.2%		63.2%	
Race/ethnicity								
American Indian and Other	3.0%		2.7%		3.0%		4.8%	
Asian or Pacific Islander	7.0%		8.4%		6.7%		5.0%	
African American	5.0%		4.3%		5.1%		7.7%	
Hispanic	2.3%		2.4%		2.3%		2.9%	
(White)	82.7%		82.2%		82.9%		79.6%	
Parental education								
Parental education	0.00	1.00	-0.09	0.98	0.01	1.00	0.12	1.01
Academic preparation								
Academic preparation	0.00	1.00	-0.29	1.04	0.04	0.98	0.35	0.94
Major field								
Humanities	14.0%		8.1%		14.5%		25.6%	
Math and sciences	21.5%		22.0%		21.3%		21.2%	
Social sciences	16.8%		13.1%		17.5%		20.3%	
Undecided	4.7%		7.3%		4.3%		1.8%	
(Pre-professional)	43.1%		49.3%		42.5%		31.1%	
Year in college								
Sophomore	19.7%		20.5%		19.6%		17.8%	
Junior	15.8%		15.5%		15.7%		17.0%	
Senior	27.8%		22.0%		28.1%		43.6%	
(First-year student)	36.7%		42.0%		36.6%		21.7%	

TABLE 3. Coefficient Estimates from Multinomial HLM Model of Student and Institutional Characteristics on Student Membership

Variables	Disengaged vs. Typical			Engaged vs. Typical		
	Coefficients	Odds Ratio	Sig.	Coefficients	Odds Ratio	Sig.
Student-level						
Gender						
Men	0.425	1.530	***	0.136	1.146	**
(Women)						
Race/ethnicity						
American Indian and Other	-0.278	0.757		0.758	2.134	***
Asian or Pacific Islander	-0.050	0.951		0.066	1.068	
African American	-0.462	0.630	***	0.894	2.445	***
Hispanic (White)	-0.050	0.951		0.527	1.694	***
Parental education						
Parental education	-0.056	0.946	***	0.101	1.106	***
Academic preparation						
Academic preparation	-0.234	0.791	***	0.261	1.298	***
Major field						
Humanities	-0.617	0.540	***	0.764	2.147	***
Math and sciences	-0.157	0.855	***	0.281	1.324	***
Social sciences	-0.314	0.731	***	0.378	1.459	***
Undecided (Pre-professional)	0.153	1.165	**	0.041	1.042	
Year in college						
Sophomore	-0.122	0.885	**	0.500	1.649	***
Junior	-0.166	0.847	***	0.673	1.960	***
Senior (First-year student)	-0.319	0.727	***	0.967	2.630	***

Cohort									
Cohort 1990–92	-0.163	0.850	***	-0.001	0.999				
Cohort 1996–98	0.073	1.076		0.018	1.018				
(Cohort 1993–95)									
Individual perception									
Perceptions of scholarly and intellectual emphasis	-0.210	0.811	***	0.204	1.226			***	
Perceptions of quality of personal relations	-0.214	0.807	***	0.505	1.657			***	
Perceptions of vocational and practical emphasis	-0.089	0.915	***	0.075	1.078			*	
Institution-level (on intercepts β_{01} and β_{02})									
Institutional control									
Public	0.224	1.251	*	-0.132	0.876				
(Private)									
Selectivity									
Institutional selectivity	-0.039	0.962		-0.064	0.938				
Institutional type									
DU	-0.240	0.787	*	0.235	1.265			*	
CCU	-0.185	0.831	*	0.089	1.093				
SLA	-0.405	0.667	*	0.424	1.528			*	
GLA	-0.361	0.697	*	0.442	1.556			*	
(RU)									
Aggregate environment measures									
Scholarly and intellectual emphasis	-0.004	0.996		-0.014	0.986				
Quality of personal relations	0.037	1.038		0.079	1.082				
Vocational and practical emphasis	0.054	1.055		-0.138	0.871			*	

*** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.

lectual and critical analysis, had high quality personal relations between groups, and emphasized vocational and practical matters. Students in public institutions were more likely to be disengaged than those in private institutions. Similarly, students at RUs were more likely to be disengaged compared with their peers at other types of schools. Institutional selectivity and aggregate institutional environment measures did not affect the likelihood of student membership in the disengaged group in contrast to the typical group.

Now, we report the HLM results comparing students in the engaged group with those in the typical group. In general, the pattern of variables predicting group membership was similar to the previous analysis. All else being equal, men were slightly more likely than women to be in the engaged in contrast to the typical group. Students from other racial and ethnic backgrounds were more likely than Whites to be among the engaged, with the exception of Asian American students. As with the previous comparison, high levels of parental educational level and academic preparation predicted membership in the engaged group. Students in other major fields were more likely to be engaged than those in pre-professional fields, except for those undecided about their majors. Sophomores, juniors, and seniors were more likely to be engaged than first-year students. There was no cohort difference in membership in the engaged in contrast to the typical group. Students were more likely to be engaged if they perceived that their institution emphasized scholarship and intellectual and critical analysis, had high quality personal relations between groups, or emphasized vocational and practical matters. Students in DUs, SLAs, and GLAs were more likely to be engaged than those in RUs, while students in CCUs did not differ significantly from those in RUs. The higher the aggregate institutional environment measure on vocational and practical emphasis, the less likely students in those institutions were to be engaged. However, institutional control, selectivity, and the other two aggregate institutional environment measures had no significant effect on student engagement in comparison to the typical students.

Recapping the key HLM findings, most of the independent variables consistently predicted student membership in the three levels of engagement groups. That is, if the effect of the variable was negative (or positive) on membership in the disengaged vs. the typical, the effect was usually positive (or negative) on membership in the engaged vs. the typical. This was especially evident for parental education, academic preparation, year in college, major field, individual perceptions of the institutional environment, and institutional type. However, two student characteristics (sex, race and ethnicity) affected group membership in more complicated ways. On the one hand, men were more likely to be in both the disengaged and the engaged groups than women, suggesting a curvilinear relationship between being male and level of engagement. Also, student race and ethnicity was more strongly related to membership in the engaged vs. the typical group than to the disengaged vs. the typical group. For example, only

African Americans were less likely to be in the disengaged vs. the typical group, but all racial and ethnic groups except Asian Americans were more likely than Whites to be in the engaged contrasted with the typical group. Although disengaged group membership was related to cohort and institutional control, no such relationships were found for membership in the engaged vs. the typical groups. Finally, the aggregate institutional environment measure on vocational and practical emphasis was negatively associated with membership when comparing the engaged and typical groups, but it had no effect on when comparing disengaged vs. typical group membership.

DISCUSSION

The warrant for this study springs from the empirical observation that students who devote relatively high levels of effort to a variety of educationally purposeful activities gain more from college than those who focus on only one activity or who put forth little effort in only a few (Kuh et al., 2000; Pace, 1990b; Pascarella and Terenzini, 1991). This study indicates that certain student background characteristics (sex, race and ethnicity), level of parental education, student academic preparation, years in college, major field, and perceptions of the college environment interact in complex ways to influence student engagement in educationally purposeful activities. As such, the results confirm some of the findings from other recent studies (Flacks and Thomas, 1998). For example, students from most racial and ethnic groups other than Asian Americans were more likely to be engaged than White students. However, two findings are somewhat at odds with Flacks and Thomas. First, student parental education was positively related to membership in the more engaged groups. Second, men were more likely than women to be either in the disengaged or in the engaged group in contrast to being in the typical group.

The better one is academically prepared and the longer one is in college the more likely a student was to be engaged at higher levels. These findings are not surprising, particularly considering that the sample in this study was not longitudinal in nature. Perhaps being disengaged takes a toll in terms of academic performance and satisfaction, correlates of premature departure from college (Tinto, 1993).

Institutional characteristics also were related in some predictable ways to membership in the disengaged and engaged groups, more so than to membership in the typical group. This is not surprising, given the large number of students that make up the typical group. One seemingly consistent finding is that students at RUs were less likely to be engaged in educational purposeful activities than their counterparts in other types of institutions, a finding consistent with observations of others (Boyer Commission on Educating Undergraduates in the Research University, 1998; Kuh and Hu, 2001a).

In this study, the perceptions of individual students of all three dimensions of their institutional environments positively influenced engagement. However, students' aggregate perceptions of the degree to which their school emphasized practical and vocational matters were associated with lower levels of engagement. This result is generally consistent with patterns of findings from previous work looking at peer influence and student perceptions of institutional environments and the effects of these perceptions on student engagement (Hu and Kuh, 2000; Kuh and Hu, 2001b). Indeed, peers substantially influence how students spend their time and the meaning they make of their experiences including their personal satisfaction with college (Astin, 1993; Kuh et al., 2000; Pascarella and Terenzini, 1991). Perhaps seeing that their studies can have practical value encourages students to become more actively involved in various other appropriate aspects of the college experience. At the same time, being around peers who are in college primarily to obtain a good job (as reflected by the aggregated measure) may discourage student engagement.

The finding that individual and aggregated perceptions of the key features of the institutional environment have contradictory effects on student engagement is also instructional in the controversy over the choice of unit of analysis in organizational studies (Berger and Milem, 2000). Organizational studies have focused on examining organizational phenomena at multiple levels (Peterson, 1985; Pfeffer, 1997), which has forced researchers to wrestle with selecting the appropriate level of analysis and units of measurement. As Hu and Kuh (2000) suggested, hierarchical modeling is a viable way to differentiate the relative influence of the individual and organizational variables on the outcome measures. When only one level of unit of analysis was chosen, the final results depend largely on the relative weights of the variances at the individual level and the variances at the organizational level (Bryk and Raudenbush, 1992).

Some student background characteristics (e.g., being White, poor academic preparation) and some institutional characteristics (e.g., public support) were associated with lower levels of student engagement in educationally purposeful activities. Few colleges and universities can do much about such factors. However, there are some things an institution can do to influence how individual students perceive their school, particularly how students think about the utility of their studies—how what they are learning can be used in their lives beyond the classroom—and the extent to which their school values intellectual activity and promotes high-quality relations between various groups on campus. For example, to address the former, faculty members can make concrete links between what students are reading and discussion and other aspects of their lives, such as their job setting and family or peer relations, and design assignments and examinations that require students to demonstrate how to use what they are learning in other settings (Kuh, Douglas, Lund, and Ramin-Gyurnek, 1994). In addition, faculty members, academic administrators, and student affairs profes-

sionals can influence the extent to which students perceive that the institutional environment values scholarship and intellectual activity by communicating high expectations for student performance, both inside and outside the classroom. Such expectations should clearly and consistently be communicated to students by admissions officers and others before and repeated after students matriculate (Kuh, 2000; Kuh et al., 1991). Faculty members must then hold students to these standards by structuring classes and making assignments that challenge students at appropriate levels (National Survey of Student Engagement, 2000). There is, for example, some evidence that students expect to read and write more than they actually do (Kuh, 2001). No wonder that student perceptions of institutional environments may not be congruent with the amount of effort required to succeed in college.

Limitations

This study has several limitations. First, only full-time enrolled students were included in the study to examine the effects of individual and institutional characteristics on engagement-based group membership. It is not known if the relationships between student engagement, student characteristics, and institutional characteristics discovered in this study hold for part-time students as well. Second, adding other institutional characteristics to the analysis, such as per student educational expenditures and measures of research productivity, may produce different results and conclusions. Future research should include more measures of institutional characteristics. Moreover, we used the 1994 Carnegie classification of higher education institutions in this study. The use of the newly released institutional classification by the Carnegie Commission might shed new lights on the effects of institutional characteristics on student membership associations. Finally, most activity scales in CSEQ were designed to assess educationally purposeful activities outside of classroom. Recent research indicates that student engagement in classroom was also critical to student intellectual development and academic achievement (Colbeck, Cabrera, and Terenzini, 2001; Marks, 2000; Murray, 1991; Tinto, 1997). Perhaps more information on student engagement in instructional and classroom activities should be collected to fully understand student engagement in future studies.

CONCLUSION

Student engagement is a function of the interaction of student and institutional characteristics. Many of these characteristics are immutable, such as sex and racial and ethnic background and institutional type and control. Others, such as students' academic preparation, are difficult for an institution to change unilaterally without fundamentally shifting the institutional mission and constituent

base. The most promising approach to encouraging higher levels of student engagement on the part of more students is to change the perceptions that students have of certain aspects of the institutional environment. While this is not easy to do, it is possible if various groups work together in designing an enrollment management and institutional culture change strategy.

ENDNOTES

1. The data set used in this study is the one used in the Kuh, Hu, and Vesper (2000) study with the elimination of several institutions with too few student records and student records without reporting on perceptions on institutional environment. Sufficient cases from each institution are necessary for reliable estimates for institutional level variables in HLM. In addition, CSEQ only collects information for students in institutions on the CSEQ offering at least a baccalaureate degree.
2. The multinomial hierarchical model was set up in the way to compare each category with lower score to the category with the highest score in coding for the dependent variable.

REFERENCES

- Anaya, G. (1999). College impact on student learning: Comparing the use of self-reported gains, standardized test scores, and college grades. *Res. Higher Educ.* **40**: 499–527.
- Astin, A. W. (1985). *Achieving Educational Excellence*, Jossey-Bass, San Francisco.
- Astin, A. W. (1993). *What Matters in College: Four Critical Years Revisited*, Jossey-Bass, San Francisco.
- Baird, L. L. (1976). *Using Self-Reports to Predict Student Performance*, College Board, New York.
- Barron's Profiles of American Colleges (1996). Barron's Educational Series, Hauppauge, New York.
- Berger, J. B., and Milem, J. F. (2000). Organizational behavior in higher education and student outcomes. In: Smart, J. C. (ed.), *Higher Education: Handbook of Theory and Research* (Vol. XV), Agathon, New York, pp. 268–338.
- Boyer Commission on Educating Undergraduates in the Research University (1998). *Re-inventing Undergraduate Education: A Blueprint for America's Research Universities*, The Carnegie Foundation for the Advancement of Teaching, Stony Brook, New York.
- Bradburn, N. M., and Sudman, S. (1988). *Polls and Surveys: Understanding What They Tell Us*, Jossey-Bass, San Francisco.
- Bruffee, K. A. (1993). *Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge*, Johns Hopkins University Press, Baltimore.
- Bryk, A. S., and Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*, Sage, Newbury Park, CA.
- Carnegie Foundation for the Advancement of Teaching (1994). *A Classification of Institutions of Higher Education*, Author, Princeton, NJ.
- Chickering, A. W., and Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bull.* **39**(7): 3–7.
- Chickering, A. W., and Reisser, L. (1993). *Education and Identity* (Rev. ed.), Jossey-Bass, San Francisco.

- Colbeck, C. L., Cabrera, A. F., and Terenzini, P. T. (2001). Learning professional confidence: Linking teaching practices, students' self-perception, and gender. *Rev. Higher Educ.* **24**: 173–191.
- Converse, J. M., and Presser, S. (1989). *Survey Questions: Handcrafting the Standardized Questionnaire*, Sage, Newbury Park, CA.
- Education Commission of the States (1995). *Making Quality Count in Undergraduate Education*, Author, Denver.
- Ethington, C. A. (1997). A hierarchical linear modeling approach to studying college effects. In: Smart, J. C. (ed.), *Higher Education: Handbook of Theory and Research* (Vol. 12), Agathon, New York, pp. 165–194.
- Ethington, C. A. (2000). Influences of the normative environment of peer groups on community college students' perceptions of growth and development. *Res. Higher Educ.* **41**: 703–722.
- Ewell, P. T., and Jones, D. P. (1996). *Indicators of "Good Practice" in Undergraduate Education: A Handbook for Development and Implementation*, National Center for Higher Education Management Systems, Boulder, CO.
- Flacks, R., and Thomas, S. (1998, November 27). Among affluent students, a culture of disengagement. *Chronicle of Higher Education* A48.
- Goodsell, A., Maher, M., and Tinto, V. (eds.) (1992). *Collaborative Learning: A Sourcebook for Higher Education*, National Center on Postsecondary Teaching, Learning and Assessment, The Pennsylvania State University, University Park.
- Hu, S., and Kuh, G. D. (2000, November). *A multilevel analysis on student learning in colleges and universities*. Paper presented at the annual meeting of the Association for the Study of Higher Education (ASHE), Sacramento, CA.
- Johnson, D. W., Johnson, R., and Smith, K. A. (1991). *Cooperative learning: Increasing college faculty instructional productivity*. ASHE-ERIC Higher Education Report No. 4, The George Washington University, School of Education and Human Development, Washington, DC.
- Kuh, G. D. (2000). Understanding campus environments. In: Barr, M.J., and Desler, M. (eds.), *Handbook on Student Affairs Administration* (2nd ed.), Jossey-Bass, San Francisco, pp. 50–72.
- Kuh, G. D. (2001). College students today: Why we can't leave serendipity to chance. In: Altbach, P., Gumport, P., and Johnstone, B. (eds.), *In Defense of the American University*, Johns Hopkins University Press, Baltimore, pp. 277–303.
- Kuh, G. D., Douglas, K. B., Lund, J. P., and Ramin-Gyurnek, J. (1994). *Student learning outside the classroom: Transcending artificial boundaries*. ASHE-ERIC Higher Education Report No. 8, The George Washington University, School of Education and Human Development, Washington, DC.
- Kuh, G., and Hu, S. (2001a). Learning productivity at research universities. *J. Higher Educ.* **72**: 1–28.
- Kuh, G., and Hu, S. (2001b). The effects of faculty-student interaction in the 1990s. *Rev. Higher Educ.* **24**: 309–332.
- Kuh, G. D., Hu, S., and Vesper, N. (2000). They shall be known by what they do": An activities-based typology of college students. *J. Coll. Stud. Dev.* **41**: 228–244.
- Kuh, G. D., Schuh, J. H., Whitt, E. J., and Associates (1991). *Involving Colleges: Successful Approaches to Fostering Student Learning and Development Outside the Classroom*, Jossey-Bass, San Francisco.
- Kuh, G. D., Vesper, N., Connolly, M. R., and Pace, C. R. (1997). *College Student Experiences Questionnaire: Revised Norms for the Third Edition*. Center for Postsecondary Research and Planning, School of Education, Indiana University, Bloomington.

- Laing, J., Sawyer, R., and Noble, J. (1988). Accuracy of self-reported activities and accomplishments of college-bound seniors. *J. Coll. Stud. Dev.* **29**: 362–368.
- Lowman, R. L., and Williams, R. E. (1987). Validity of self-ratings of abilities and competencies. *J. Vocat. Behav.* **31**: 1–13.
- Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *Am. Educ. Res. J.* **37**: 153–184.
- McKeachie, W. J., Pintrich, P. R., Lin, Y., and Smith, D. (1986). *Teaching and Learning in the College Classroom: A Review of the Research Literature*, National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan, Ann Arbor.
- Murray, H. G. (1991). Effective teaching behaviors in the college classroom. In: Smart, J. C. (ed.), *Higher Education: Handbook of Theory and Research* (Vol. 7), Agathon, New York, pp. 135–172.
- National Survey of Student Engagement (2000). *NSSE 2000: National Benchmarks of Effective Educational Practice*, Indiana Postsecondary Research and Planning, Bloomington.
- Pace, C. R. (1985). *The Credibility of Student Self-Reports*, University of California, The Center for the Study of Evaluation, Graduate School of Education, Los Angeles.
- Pace, C. R. (1990a). *College Student Experiences Questionnaire, Third Edition*, University of California, The Center for the Study of Evaluation, Graduate School of Education, Los Angeles.
- Pace, C. R. (1990b). *The Undergraduates: A Report of Their Activities and Progress in College in the 1980s*. Center for the Study of Evaluation, Graduate School of Education, Los Angeles.
- Pascarella, E. T., and Terenzini, P. T. (1991). *How College Affects Students*, Jossey-Bass, San Francisco.
- Peterson, M. W. (1985). Emerging developments in postsecondary theory and research: Fragmentation or integration. *Educ. Res.* **14**: 5–12.
- Pfeffer, J. (1997). *New Directions for Organizational Theory*, Oxford University Press. New York.
- Pike, G. R. (1989). Background, college experiences, and the ACT-COMP exam: Using construct validity to evaluate assessment instruments. *Rev. Higher Educ.* **13**: 91–117.
- Pike, G. R. (1993). The relationship between perceived learning and satisfaction with college: An alternative view. *Res. Higher Educ.* **34**: 23–40.
- Pike, G. R. (1995). The relationships between self-reports of college experiences and achievement test scores. *Res. Higher Educ.* **36**: 1–22.
- Pike, G. R. (1996). Limitations of using students' self-reports of academic development as proxies for traditional achievement measures. *Res. Higher Educ.* **37**: 89–114.
- Pike, G. R. (1999). The constant error of the halo in educational outcomes research. *Res. Higher Educ.* **40**: 61–86.
- Pohlman, J. T., and Beggs, D. L. (1974). A study of the validity of self-reported measures of academic growth. *J. Educ. Meas.* **11**: 115–119.
- Raudenbush, S., Bryk, A., Cheong, Y. F., and Congdon, R. (2000). *HLM5: Hierarchical Linear and Nonlinear Modeling*, Scientific Software International, Lincolnwood, IL.
- Sorcinelli, M. D. (1991). Research findings on the seven principles. In: Chickering, A.W., and Gamson, Z.F. (eds), *Applying the Seven Principles for Good Practice in Undergraduate Education*, *New Directions for Teaching and Learning* (No. 47), Jossey-Bass, San Francisco, pp. 13–25.
- The Study Group on the Conditions of Excellence in American Higher Education (1984). *Involvement in Learning: Realizing the Potential of American Higher Education*, U.S. Department of Education, Washington, DC.

- Tinto, V. (1993). *Leaving College*, University of Chicago Press, Chicago.
- Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *J. Higher Educ.* **68**: 599–623.
- Turner, C. F., and Martin, E. (eds.) (1984). *Surveying Subjective Phenomena* (Vol. 1), Russell Sage Foundation New York.

Received March 7, 2001.