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What every student affairs professional should know: Student study activities and beliefs associated

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What Every Student Affairs Professional Should Know: Student Study Activities and Beliefs Associated With Academic Success

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We describe the academic profiles of a heterogeneous sample of 1,379 college students, diverse in ethnicity, in prior college experience, and in academic goals. One third of participants are male. Nearly half are above traditional college age. We discuss relationships between their demographic characteristics, their study habits, their beliefs about academic success, and four indices of their success: (a) GPA, (b) Perseverance, (c) Task Involvement and (d) Teacher Rapport (the latter three constituting measures of their "mastery orientation"). Discussion focuses on ways to help the "strugglers" achieve a better fit within the university community.

By the end of the 1980s, researchers had compiled a fairly clear picture of the formulas of success for "traditional" college students, that is 18-to-22-year-old nonminority students from middle-class backgrounds whose parents had attended college. This formula included consideration of the adequacy of students' academic preparation, the appropriateness of their educational expectations and career goals, the "anticipatory socialization" (Weidman, 1989) they had received from parents, peers, and others prior to entering college (such as talk about their college experiences, or about preparing academically for college, etc.), and their assimilation into their new milieu upon matriculation. (See for example, Astin, 1993; Pascarella & Terenzini, 1991; Tinto, 1993.) Recently, however, frustrated by the relatively low rates of college entrance, retention, and graduation among minority and nontraditional student populations, several scholars have called into question the universality of some of these patterns and urged that more research be conducted so as to better understand the dynamics at play among the less "traditional" and more diverse populations now making their way to and through college (Astin, 1998; Justiz, 1994; Kraemer, 1997; Pascarella & Terenzini, 1998; Rendon, 1994; Stage, 1993; Strage, 2000; Suzuki, 1994; Tierney, 1992).

As universities feel increasing pressures to become more consumer friendly, and to accommodate the needs of an increasingly heterogeneous and arguably less well-prepared student body, campuses have begun to examine the fit between their expectations and those of their students. Efforts to better prepare students for the varied demands of the college environment, such as ensuring the completion of the process of "getting ready" and "getting in" (Attinasi, 1989), or reviewing their "expectational stance" vis-à-vis possible barriers to success (Padilla, Trevino, Gonzalez, & Trevino, 1997) hold

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promise, and are associated with college attendance and retention. Mentoring programs and other sorts of support mechanisms designed to engage and sustain at-risk students once they begin matriculating appear to be generally effective as well (Campbell & Campbell, 1997; Gaither, 1999; Tinto, 1993).

The broader university community has come to expect offices of student affairs to continue taking the lead in identifying critical needs of a changing student body, and in providing the appropriate support services to students as well as to faculty (Hoover, 1997; Shaffer, 1993). To be maximally effective, however, student affairs personnel must know the needs and expectations of the many student sub-populations on campus, and must be able to anticipate potentially problematic mismatches between what students bring to the table and what will be required of them to succeed (Hoover). This may well require more comprehensive assessments of students' "motives and desire to learn," their "reason for coming to college," and the "challenges and barriers" they may face as they immerse themselves in the college environment (Wolf-Wendel & Ruel, 1999, p. 42). It may also require increased cooperation with faculty and other academic personnel (Kuh & Banta, 1998). Indeed, noting that students' academic learning and personal development are "inextricably intertwined and inseparable," the American College Personnel Association (1994) has called upon student affairs personnel to work closely with faculty to foster student learning. The more textured their appreciation of the motivational profiles of the student body, the more precision they can bring to the task of supporting the goals of the learning community.

The findings presented in the current study are part of a research project that grew out of a year-long conversation among a group of faculty colleagues brought together as "Teacher Scholars" at our university. Collectively, we represent seven of the eight discipline-based colleges on our campus. The questions we addressed are central to the concerns of contemporary proactive student affairs personnel:

1. Who is succeeding academically on our campus, and who is struggling? Our concern here was not limited to how well students were faring in terms of GPAs, but rather included a broader definition of success—one which took into consideration the degree to which students evidenced a positive outlook toward academic challenge.

2. What expectations, beliefs and study behaviors differentiate the students who are doing well from those who are not? In other words, what are the students who appear to be well adapted to their academic environment doing to rise to the challenge?

3. What can or should we do about what we find? Our ultimate goal is to identify ways (resources, information, accommodations) to help the "strugglers" achieve a better fit within the university community.

The results we report here pertain to the first two questions. More specifically, we present a snapshot of the academic profiles of 1,379 students, and discuss what these profiles reveal about the relationships between students' demographic characteristics, their perceptions and expectations concerning their academic environment, their study habits, and their academic success. Our discussion, which highlights some of the implications of these findings, begins to address the third question.

Indices of Academic Achievement and Motivation

Most research on college students measures success in relatively broad strokes, such as whether or not students remain enrolled, whether or not they complete a degree program in a certain period of time, and what sorts of grades they earn in the process (e.g., Pascarella & Terenzini, 1998; Tinto, 1993). Although this focus on outcomes provides valuable "summative evaluation" information, it does not shed much light on the psychological processes and profiles of students as they move through their college years.

In contrast, much of the literature on middle school and high school students' achievement adopts a more analytical perspective on student outcomes, one that might be quite useful in assessing and fostering college students' success as well. This body of research describes the "mastery oriented" student as the prototype of success: the student who is able to maintain focus and persist in the face of obstacles, and who views their instructors as resources to assist them in their quest for knowledge (Covington, 1984; Dweck, 1985, Dweck & Elliott, 1983; Dweck & Leggett, 1988; Hayamizu & Weiner, 1991; Nicholls, 1984). Although such younger populations of students differ from college students in many ways in terms of their levels of cognitive, social-cognitive and emotional development, the extant literature suggests that the achievement motivational processes that regulate younger students' approaches to their academic world remain valid and operative for older students as well. (See for example, Bouffard, Boisvert, Vezeau, & Larouche, 1995; Covington, 1999; Strage, 1999, 2000; Strage & Brandt, 1999.) And teaching guidelines and rubrics grounded in this sort of model of motivational processes

are useful tools for college faculty and staff as they try to motivate students to be more actively engaged in their courses (Forsyth & McMillan, 1991; McMillan & Forsyth, 1991).

Indices of Students' Study Behaviors

The framework we have adopted in examining students' academic studying is grounded in the literature on self-regulated and self-directed learning (Schunk & Zimmerman, 1989, 1998; Thomas & Rohwer, 1987, 1993). Research within this theoretical perspective has sought to identify ways and contexts in which students monitor and regulate the time and effort they devote to their studies, as well as the specific study strategies and activities they deploy. Researchers have examined the ways students take responsibility for their own learning as well as the diligence with which they seek assistance and support, such as that of the instructor (Zimmerman, 1990; Zimmerman, Bonner, & Kovach, 1996). They have reported links between learning outcomes and the amount of time students spend focusing on a given assignment or learning objective as well as the incidence and types of note-taking students employ (Thomas, Bol, & Warkentin, 1991; Thomas & Rohwer, 1987, 1993). And they have documented the connection between college students' expectancy of success and their self-regulated strategy use (Van Zile-Tamsen, 2001).

The goals of this study, once again, were (a) to compile profiles of the students who were succeeding, in terms of both their grades and their achievement motivations; (b) to identify specific study activities, expectations and beliefs related to their academic experiences, that appeared to be associated with their success; and (c) to speculate about the implications of these findings for promoting

student success.

METHODS

Participants

A total of 1,379 students enrolled in 46 courses participated in the study. Courses were selected so as to include classes taught by the authors as well as classes taught by other faculty, and so as to include a broad sampling of lower and upper division classes, as well as general education, major, and elective classes from across the university's undergraduate curriculum. The sample included approximately one third under-classmen (17.4% freshmen, 12.9% sopho-mores), two thirds Upperclassmen (26.2% Juniors, 38.6% Seniors), and a relatively small number of graduate students (4.9%) from a total of 42 academic majors. Approxi-mately two thirds of respondents were female. (Eight of the classes sampled were in the Child Development and Nursing departments, where students are predominantly female. Because we found no significant gender differences in the dependent variables considered in this study, analyses reported here collapse across gender.) Nearly all ($n = 1,259$, 89.9%) were carrying a full-time course load (three or more courses per semester). The sample reflected the hetero-geneity of our campus: A little over half ($n = 756$, 55.8%) were of traditional college age (18 to 22). Most of the rest ($n = 551$, 40.7%) were between the ages of 23 and 39. One third ($n = 425$, 33.1%) indicated that they were the first in their immediate family to attend college. Slightly over half ($n = 768$, 55.7%) indicated that "most or all" of their high school friends had also gone on to college. Nearly two thirds indicated that they lived with their parents ($n = 560$, 40.6%) or with their spouse or significant other and

children ($n = 247$, 17.9%). Over a quarter indicated that they were born outside of the United States ($n = 381$, 27.6%). Nearly a third ($n = 388$, 28.8%) indicated that they spoke a language other than English at home. A third ($n = 465$, 33.7%) marked their ethnicity as White; another third ($n = 395$, 28.5%) marked theirs as one of several Asian categories; approximately one fifth of respondents ($n = 236$, 17%) marked theirs as one of several Hispanic categories; a little less than one tenth ($n = 95$, 6.9%) indicated that they were African American; a little more than one tenth ($n = 168$, 12.2%) indicated their racial-ethnic background was some-thing else or mixed; and 20 respondents (1.5%) declined to state their racial-ethnic background. This distribution is repre-sentative of our campus student population as a whole.

Procedure

The authors arranged for surveys to be administered in all of the participating classes within a 2-week period during the second half of the semester. Participation was voluntary. Approximately 90% to 95% of students were present on the day the survey was ad-ministered completed it. (In all but one class, students completed the survey during class time; in that class, taught by one of the authors, students were instructed to complete the surveys at home and bring them to their laboratory section the next day).

Instrument

We developed the 96-item survey used in this study to address the research questions enumerated above. More specifically, it was designed to yield the sort of information that would allow us to define carefully and understand our student sub-populations, and to assess and address their needs (Hoover,

1997). The first section consisted of 21 multiple-choice format questions about respondents' family backgrounds and general situation. These particular demographic and personal items were included because they correspond to variables that have been investigated in the extant literature. Respondents were asked to supply information about the number of units they were taking, their class standing, their major, their age, their gender, their ethnic background, their English language proficiency and the language they spoke at home, their living situation during the academic year, the number of hours they devoted to employment, the number of hours they devoted to family responsibilities, the proportion of their high school friends who had gone on to college, and whether they were the first person in their family to attend college. These items were included to provide a profile of the students and of their everyday lives. Students were also asked to report their GPA on a five-point scale, by selecting the range within which their GPA fell (1 = *GPA of 2.00 or less*; 2 = *GPA of 2.01 to 2.50*, 3 = *GPA of 2.51 to 3.00*; 4 = *GPA of 3.01 to 3.50*; and 5 = *GPA of 3.51 to 4.00*, where 4 = *A*, 3 = *B*, 2 = *C*, and 1 = *D*). Although there is always the danger that students' self-reports of their GPA may be inaccurate, students' reports in this instance were consistent with both the grade distributions for students enrolled in the classes from which data were collected, and with the grade distributions for students in each of the majors represented in this sample. Furthermore, students were reminded that the surveys were anonymous, and they were asked to be as honest and candid as possible so as to ensure the validity of any conclusions that might be drawn from their answers.

The next section consisted of 69 5-point

Likert-type scale items about respondents' study activities and attitudes about school work ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). It included items that comprised three student success variables that provided a picture of the respondents' achievement motivation profiles (see for example Dweck & Elliott, 1983; Strage & Brandt, 1999). The first scale, Perseverance (4 items, α = .7346), sought to measure students' persistence in the face of challenge. The second scale, Task Involvement (4 items, α = .7194) assessed their ability to remain focused and goal-directed as academic material became increasingly intractable. The third scale, Teacher Rapport (3 items, α = .7101), measured the degree to which students perceived their instructors as resources they could count on. Taken together, the scores students earned on these scales provided an index of how successfully respondents were able to adapt to the exigencies of their academic environment. High scores on these scales reflect positive adaptation to the academic milieu and a "mastery" orientation to the academic challenges they faced (Dweck & Elliott, 1983). Low scores on these scales are associated with poor adaptation, "learned helplessness" and other pathologies of achievement motivation (Dweck & Elliott, 1983). (See the Appendix for a list of the items and scales subjected to analysis here.)

This section of the survey also included a series of items that asked students to indicate the frequency with which they engaged in particular types of study activities, or how strongly they held particular beliefs that reflected habits of self-regulated learning. More specifically, students were asked to provide information about 26 Study Activity variables: their Effort Management (8 items), their Time Management (3 items),

their Note-taking (2 items), their Use of the Instructor as a Resource (3 items), the degree to which they would Seek Out a Challenge (3 items), and their Thoughts about their Responsibility for their own Learning (7 items). Each of these categories of activities or attitudes and beliefs has been identified as a component of self-directed and self-regulated learning, and has been associated with one index or another of academic success (Thomas & Rohwer, 1987; Zimmerman, 1990). (The remaining 22 items on the survey were not included in the analyses reported on here.)

RESULTS

Data Analysis Plan

To identify links between demographic variables, study activity variables, and student success, two series of Multivariate Analyses of Variance (MANOVAs) were conducted. For each analysis, a demographic or study activity variable served as the independent variable, and the four indices of student success (GPA, Persistence, Task Involvement, and Teacher Rapport) served as the dependent variables. Given the large number of independent and dependent variables of interest, adopting the relatively conservative MANOVA estimates of statistically significant relationships seemed more prudent that conducting a much larger number of separate univariate analyses (ANOVAs). Additionally, a series of two-tailed correlational analyses was conducted to assess the relationship between students' success and their attitudes and preferences about their instructors.

Who Is Succeeding?

Age. Students differed in their success as a function of age, both overall ($\lambda = .91815$, $F (4, 1323) = 7.15$, $p < .000$), and with respect to GPA and all three indices of "mastery orientation." Post hoc tests confirmed that the older students (ages 23 and above) were

TABLE 1.

Means and Differences in GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores as a Function of Students' Age

	n	Mean GPA	Mean Perseverance	Mean Task Involvement	Mean Teacher Rapport
Age					
below 20	321	3.37	3.84	2.90	3.82
21-22	441	3.35	3.99	3.14	3.78
23-28	406	3.55	4.09	3.13	3.84
29-39	150	4.00	4.22	3.27	4.01
40 or older	48	4.11	4.38	3.51	4.28
F		16.88	10.30	8.59	4.38
p		.000	.000	.000	.002

Note. Data are missing from 13 of the 1,379 students who participated in this study, who (.9%) declined to state their age.

TABLE 2.

Means and Differences in GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores as a Function of Students' Ethnicity

	n	Mean GPA	Mean Perseverance	Mean Task Involvement	Mean Teacher Rapport
Ethnicity					
African-American	92	3.06	3.92	3.13	3.82
Caucasian or White	461	3.78	4.07	3.28	3.94
Chinese or Japanese	106	3.50	3.88	3.07	3.72
Vietnamese or Cambodian	108	3.61	3.92	2.77	3.58
Filipino	139	3.21	4.14	3.02	3.80
Indian or Pakistani	41	3.78	4.05	3.12	3.96
Hispanic: Chicano/a	192	3.31	4.11	3.01	3.91
Hispanic: Guatemalan	17	3.12	3.86	2.91	3.97
Other Hispanic	23	3.26	4.10	3.23	3.91
Middle Eastern	20	3.30	3.74	2.97	3.50
Native American	3	3.67	3.92	3.58	4.17
Pacific Islander	11	3.45	3.73	3.11	3.68
Mixed racial	80	3.35	3.93	3.02	3.78
Other	53	3.66	3.91	3.02	3.90
F		6.21	1.64	3.64	1.83
p		.000	.068	.000	.037

earning higher grades and exhibited greater levels of "mastery orientation" than their younger counterparts (LSD tests with $p < .05$). (See Table 1.)

Ethnicity. Students also differed in their success as a function of their ethnic or racial backgrounds, overall, $\lambda = .88395$, $F(13, 1308) = 3.15, p < .000$; and for all but the Perseverance index of success. Post hoc comparisons revealed a somewhat complex picture of the ethnic group differences in success, however (all LSD tests with $p < .05$). White students were earning higher GPAs than the African American students, the students from Chinese, Japanese, or Korean ethnic backgrounds, and the students from the various Hispanic backgrounds. The White students were also significantly more Task Involved than students from the various Asian backgrounds and from Mexican-Hispanic heritages. The White students reported better teacher rapport than the students from Chinese, Japanese, Korean, Vietnamese, Cambodian or Laosian backgrounds. This varied pattern underscores the importance of looking closely at the nature of ethnic differences, and avoiding over-simplifications and overgeneralizations. (See Table 2.) A similar but not identical pattern emerged from analyses comparing foreign-born and U.S.-born students. U.S.-born students were more successful, overall,

$\lambda = .98436$, $F(1, 1323) = 5.24$, $p < .000$; reporting greater levels of Teacher Rapport and Task Involvement. There were no differences between U.S.-born and foreign-born students in GPA or in Perseverance.

English language fluency. Students differed in their degrees of success as a function of their reported oral and written English proficiency, both overall ($\lambda = .93326$, $F(3, 1321) = 7.71$, $p < .000$ and $\lambda = .94959$, $F(3, 1321) = 5.74$, $p < .000$, respectively), and for each of the indices of "mastery" orientation. Post hoc comparisons revealed that the students who reported their oral or written English proficiency to be "excellent" were succeeding better than the students who

reported theirs to be "good" or "fair" (LSD tests, with $p < .05$). In a similar vein, students who reported speaking English at home were doing better than students who reported speaking another language at home, overall, $\lambda = .93334$, $F(3, 1321) = 6.06$, $p < .000$; and with respect to three of the four indices of success (all except Perseverance). Only a small percentage of respondents (13.9%) regarded their written English as "poor" or "fair"; and nearly half (46.5%) rated it as "excellent." The picture was even more dramatic for their assessment of their spoken English skills, with over half indicating their level of proficiency as "excellent" (55.6%). When we presented these findings to our

TABLE 3.

Means and Differences in GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores as a Function of Students' Proficiency in Written and Spoken English

	n	Mean GPA	Mean Perseverance	Mean Task Involvement	Mean Teacher Rapport
Writen English					
Poor	22	3.36	4.21	2.74	3.57
Fair	168	3.32	3.75	2.74	3.67
Good	541	3.43	4.00	3.04	3.81
Excellent	635	3.64	4.10	3.26	3.95
F		6.37	10.22	20.08	6.78
p		.000	.000	.000	.000
Spoken English					
Poor	6	4.00	4.12	2.88	4.08
Fair	99	3.43	3.78	2.72	3.52
Good	491	3.40	3.96	3.02	3.76
Excellent	766	3.59	4.09	3.21	3.96
F		4.06	6.29	12.45	11.15
p		.007	.000	.000	.000

Note. Data are missing from 13 of the 1,379 study participants (.9%) who declined to state their written English proficiency, and from the 17 (1.2%) who declined to state their spoken English proficiency.

TABLE 4.

Means and Differences in GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores as a Function of Number of Hours Students Work per Week

	n	Mean GPA	Mean Perseverance	Mean Task Involvement	Mean Teacher Rapport
Hours Worked					
None	336	3.59	4.03	3.11	3.84
1-5	37	3.97	4.01	3.36	3.97
6-10	106	3.64	4.07	3.12	3.82
11-20	424	3.44	4.04	3.04	3.88
21-30	292	3.43	3.96	3.10	3.83
31 or more	176	3.50	4.03	3.19	3.84
F		3.87	0.72	1.24	0.46
p		.004	.580	.290	.767

Note. Data are missing from 8 of the 1,379 students who participated in this study (.6%) who declined to state the number of hours they were employed per week.

colleagues across our campus, they were quite surprised at how positively the students had assessed their communication skills. Clearly, at least on our campus, university personnel and students perceive students' skills in this arena differently, and this misalignment is not trivial, inasmuch as language proficiency would appear to be an important factor in student success. (See Table 3.)

Employment. Although nearly 25% of study participants were not employed, approximately two thirds (65%) were employed 11 or more hours per week, and over a third of respondents (34%) were employed more than 20 hours per week. Much to our relief and surprise, however, number of hours worked was only marginally associated with success, $\lambda = .97864$, $F(4, 1158) = 1.56, p = .070$. Students working 1 to 5 hours per week reported a higher GPA than other students in our sample (LSD

test with $p < .05$), but no other differences on the other indices of success even approached statistical significance. (See Table 4.)

College experience. Results of the MANOVA indicated that students who reported being the first person in their family to attend college were not faring as well as those who indicated that they were not the first, $\lambda = .99069$, $F(1, 1334) = 3.12$, $p = .014$. The only individual index of success for which this variable was a significant predictor of success, however, was Task Involvement. A similar picture emerged from our comparison of students' success as a function of the proportion of their friends to attend college. Although the proportion of high school friends to go on to college was associated with success, overall, $\lambda = .98416$, $F(2, 1234) = 2.47$, $p = .012$; the only individual index of success for which this variable was a significant predictor was Task

Involvement. Post hoc comparisons revealed that students who report "most/all" of their friends were attending college were more task-involved than their peers who reported that "half" or less of their friends had continued on to college (Post hoc LSD test with $p < .05$). (See Table 5.)

What are the Students Who are Succeeding Doing and Thinking?

The next series of analyses sought to identify differences in how well students were faring as a function of their study habits. Two things were striking about the results of these analyses: first, the degree to which these variables were associated with differential patterns of success; and second the degree to which there was wide variation among

students in how frequently or extensively they engaged in these study practices or held these beliefs.

Effort management. We were not surprised to find that, overall, the more effort students reported expending across a range of course contexts, the better they were succeeding. More specifically, effort expenditure in each of the eight course contexts (major courses, electives, courses they found interesting, courses that were not central to their interests, courses where they felt they could get a good grade, courses where they felt it would be difficult to get a good grade, courses where they "connected" with the instructor, and courses where they did not "connect" with the instructor) was significantly correlated with GPA (rs ranged from

TABLE 5.

Means and Differences in GPA, and Perseverance, Task Involvement, and Teacher Rapport Scores as a Function of Students' College Experience

	n	Mean GPA	Mean Perseverance	Mean Task Involvement	Mean Teacher Rapport
First in family to attend college					
Yes	428	3.49	4.05	3.01	3.87
No	946	3.52	4.01	3.15	3.84
F		.21	0.72	8.63	0.27
p		.651	.397	.003	.607
Proportion of high school friends to attend college					
None/few	206	3.40	4.07	3.03	3.90
About half	297	3.45	4.05	3.00	3.86
Most/all	768	3.51	3.97	3.15	3.83
Don't know	99	4.00	4.23	3.20	3.95
F		8.68	4.05	3.25	0.98
p		.000	.007	.021	.403

Note. Data are missing from 5 of the 1,379 study participants (.4%) who declined to state whether they were the first in their family to attend college, and from the 9 (.7%) who declined to state the proportion of their high school friends to attend college.

TABLE 6.

Correlations Between GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores and Effort Expended in Various Academic Contexts

	GPA	Perseverance	Correlation with Task Involvement	Teacher Rapport
Context				
Major courses	.21**	.23**	.05	.13[1]**
Interesting courses	.17**	.24**	.11**	.14**
Courses not central to my interests	.29**	.24**	.11**	.17**
I could get a good grade	.12**	.20**	.01	.16**
Hard to get a good grade	.29**	.38**	.14**	.22**
Do "connect" with the instructor	.18**	.23**	.09*	.19**
Don't "connect" with the instructor	.28**	.29**	.11**	.19**

**p < .001.   *p < .005, 2-tailed test. Minimum n = 1322.

.12 to .38), with Perseverance (rs ranged from .23 to .38), and with Teacher Rapport (rs ranged from .13 to .22). Effort expenditure in six of the eight courses contexts was significantly related to Task Involvement (rs ranged from .09 to .15). (See Table 6.)

We were quite surprised, however, at how discerning students were about expending effort. They were more likely to be working harder (a) in major courses than in electives, $t(1322) = 33.44$, $p < .000$, (b) in courses they found interesting than in courses that were less central to their interests, $t(1354) = 52.06$, $p < .000$, and (c) in courses where they "connected" with the instructor than in courses where they did not, $t(1349) = 33.62$, $p < .000$. Equally surprising were the correlational findings that, for each of these four contrasts, the greater the difference in how much effort they expended (in major vs. elective courses, for example), the less well they were succeeding on all four indices of

success (rs ranged from −.09 to −.20). (See Table 7.)

Time management. All three items that tapped students' time management habits were systematically predictive of academic success and adaptation.

Number of hours spent studying. The more students studied, the better they were doing on three of the four indices of success (all but Task Involvement) (rs ranged from .09 to.28). A third of the students (34.5%) indicted that they studied between 1 and 5 hours per week, and another third (36.1%) indicated that they studied between 6 and 10 hours per week, and the rest (29.4%) indicated that they spent over 11 hours working on coursework. Time spent studying was not correlated with number of hours employed or devoted to family responsibilities. (See Tables 8 and 9.)

Getting the reading done before class. The more frequently students completed

assigned reading before class, the better they were succeeding on all four of the measures of success (*r*s ranged from .14 to .18). However, nearly half the students indicated that they only occasionally completed the assigned reading before class, and barely a quarter (27%) indicated that they almost always did. (See Tables 8 and 9.)

Needing to ask for an extension. The more frequently students needed to ask for an extension, the less well they were faring on each of the individual indices of success (*r*s ranged from −.14 to −.23). Over three-quarters of the students (86.8%) indicated that they rarely or never needed to ask for extensions. (See Tables 8 and 9.)

Note-taking. Students were asked to indicate whether they took notes in class and while reading, and if so, if they found the notes helpful. In general, taking good notes in class and while reading were both asso-

ciated with greater success for each of the indices of "mastery orientation" (*r*s ranged from .07 to .18). Taking good notes in class was also correlated with good grades (*r* = .14). Given how important good note-taking appears to be, it is significant that despite the numerous opportunities for academic skill support on campus, over a quarter of students indicated that they felt their note-taking skills were deficient (25.8% for in class notes, 30.4% for reading notes). (See Tables 8 and 9.)

Using the instructor as a resource. Three questions were asked about the use of instructors as resources. Although nearly two thirds of students (60.6%) said they never turned in an assignment early for feedback, this variable was associated with favorable student outcomes on all four indices of success (*r*s ranged from .06 to .12). Taking instructors' comments into consideration while revising a paper and talking with the

TABLE 7.

Correlations Between GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores and Differential Effort Expenditure in Pairs of Academic Contexts

	GPA	Perseverance	Correlation with Task Involvement	Teacher Rapport
Context pair				
Major courses vs. electives	−.12***	−.08**	−.11***	−.09***
Interesting courses vs. courses not central to my interests	−.19***	−.15***	−.06*	−.10***
Easy/hard to get a good Grade on the course	−.17***	−.20***	−.12***	−.09***
Do/don't "connect" with the instructor	−.17***	−.15***	−.06*	−.07**

***p < .001. **p < .01. *p < .05, 2-tailed test. Minimum n = 1308.

TABLE 8.

Correlations Between Students' Study Activities and Attitudes and Their GPA, Perseverance Scores, Task Involvement Scores, and Teacher Rapport Scores

	GPA	Perseverance	Task Involvement	Teacher Rapport
Time management				
Hours spent studying per week	.28***	.22***	.04	.09***
Frequency of completing readings before class	.16***	.18***	.14***	.15***
Frequency of needing an extension	−.23***	−.23***	−.17***	−.14***
Note-taking				
Frequency and adequacy of notes in class	.14***	.18***	.16***	.13***
Frequency and adequacy of notes on readings	.02	.17***	.07*	.11***
Using Instructor as a Resource				
Turning in assignments early for feedback	.12***	.11***	.06*	.11***
Taking instructor's comments into consideration for revisions	.12***	.45***	.10***	.35***
Talking with the instructor outside of class	.12***	.19***	.08**	.20***
Seeking a challenge				
Want instructors to challenge them academically	.17***	.42***	.24***	.54***
Would choose a hard course where they would learn	.13***	.50***	.17***	.41***
Important goal is to increase their knowledge	.12***	.27***	.17***	.14***
Thoughts about responsibility for learning				
Want instructors to do all the talking in class	−.04	.03	−.04	−.01
Expect instructors to know all the answers	.05	.04	−.06	.01
Want lectures to cover the readings	−.04	−.20***	.03	−.13***
Expect instructors to be funny and engaging	.01	−.09***	.05	−.14***
Prefer classes where students are actively engaged in discussion	.02	.23***	.10***	.21***
Prefer instructors to give students all the answers	−.03	−.18***	−.17***	−.10***
Prefer instructors make students find the answers	.01	.20***	.10***	.18***

***$p < .001$. **$p < .01$. *$p < .05$, two-tailed tests. Minimum $n = 1322$.

instructor outside of class were similarly infrequent yet beneficial strategies (rs ranged from .10 to .45 and from .08 to .20, respectively). These findings raise the question of how to encourage students to "use" their instructors more and more effectively. They also raise the issue of how faculty want to be "used," and of how willing they are to spend the time necessary to provide this sort of formative evaluation feedback to students. (See Tables 8 and 9.)

Attitudes about responsibility: Seeking a challenge. Three items related to this construct, and students' responses to all three were related to their success. Nearly two thirds of students (62.4%) agreed or strongly agreed with the statement that they wanted their instructors to challenge them academically, and those who agreed with the statement were doing better than those that did not on all four individual indices of success (rs ranged from .17 to .54).

Furthermore, given a choice between a hard course (where they would learn a lot but where getting a good grade would be difficult) and an easy course, (where they would not learn much but where they were likely to get a good grade), just over half (53.2%) said that they would opt for the hard course. These students were also more likely to be succeeding on all of the individual indices of success (rs ranged from .13 to .50). The third item pertaining to the construct of seeking challenge asked students to rate the importance of increasing their knowledge (learning goals). Nearly all (88%) agreed with this statement; two-thirds of respondents (62.9%) strongly agreed with it. These students were also more likely to be succeeding on all of the individual indices of success (rs ranged from .12 to .27). (See Tables 8 and 9.)

Attitudes about responsibility: Role they

believe the instructor should play. Seven questions were designed to provide, collectively, a picture of how students construed their own and their instructors' responsibility for their learning. Students were fairly evenly divided about whether they wanted the instructor to do the talking; (35.8% agreed, 30.1% were neutral, 34.1% disagreed), and about whether they expected their instructors to know all the answers (36.8% agreed, 29.9% were neutral, and 33.3% disagreed). Not surprisingly, most students (69.6%) wanted the lectures to cover the readings (only 9.8% disagreed). Approximately two thirds of respondents (65%) indicated that they wanted their instructors to be funny and engaging. Their opinions on these questions, however, were not systematically related to their academic success (see Tables 8 and 9). For the remaining questions, however, students' answers were predictive of their "mastery orientation," but not of their GPAs. Approximately two thirds (65.7%) indicated that they preferred classes where students are actively engaged in discussion. Students who endorsed this view had higher scores for all three indices of "mastery orientation" (rs ranged from .10 to .23).

Students were also split as to whether they preferred the instructor to give them the answer (24.7% agreed, 36.3% were neutral, 39% disagreed). Students who wanted the answers to be given to them had lower scores for all three indices of "mastery orientation" (rs ranged from $-.10$ to $-.18$).

Conversely, students were split as to whether they preferred instructors to make them find the answer (29.5% agreed, 41.9% were neutral, 18.6% disagreed), and those who agreed had higher scores on all three indices of "mastery orientation" (rs ranged from .10 to .20). (See Tables 8 and 9.)

TABLE 9.

Summary of Students' Responses to Study Activities and Attitudes Items
(Absolute Frequencies and Percentages in Parentheses)

Time management

	Less than 1	1 to 5 hours	6 to10 hours	11 to 20 hours	More than 15	Missing data
Hours spent studying per week	20 (1.5)	453 (32.8)	495 (35.9)	238 (16.5)	166 (12.0)	7 (0.5)
	Never	Rarely	Occasionally	About half	Almost always	Missing data
Frequency of completing readings before class	50 (3.6)	214 (15.5)	345 (25.0)	387 (28.1)	368 (26.7)	15 (1.1)
Frequency of needing an extension	661 (47.9)	529 (38.4)	155 (11.2)	22 (1.6)	4 (0.3)	8 (0.6)

Note-taking

	Yes, excellent ones	Yes, not very well	No	Missing data
Frequency and adequacy of notes in class	735 (53.3)	259 (18.8)	8 (0.6)	377 (27.3)
Frequency and adequacy of notes on readings	371 (26.9)	414 (30.0)	577 (41.8)	17 (1.2)

Using instructor as a resource

	Often/Always		Occasionally		No	Missing data
Turning in assignments early for feedback	42 (3.0)		492 (35.7)		820 (59.5)	25 (1.8)
Talking with the instructor outside of class	178 (12.9)		866 (62.8)		307 (22.3)	28 (2.0)
	Str. Agree	Agree	Neutral	Disagree	Str. Disagree	Missing data
Taking instructor's comments into consideration	694 (50.3)	444 (32.2)	145 (10.5)	39 (02.8)	17 (1.2)	40 (2.9)

table continues

Table 9. *continued*

Summary of Students' Responses to Study Activities and Attitudes Items
(Absolute Frequencies and Percentages in Parentheses)

Seeking a challenge

	Hard Course				Easy Course	Missing data
Would choose a hard course where they would learn	719 (52.1)				632 (45.8)	28 (2.0)
	Str. Agree	**Agree**	**Neutral**	**Disagree**	**Str. Disagree**	**Missing data**
Want instructors to challenge them academically	316 (22.9)	525 (38.1)	372 (27.0)	106 (7.7)	29 (2.1)	31 (2.2)
Important goal is to increase their knowledge	850 (61.6)	339 (24.6)	105 (7.6)	33 (2.4)	24 (1.7)	28 (2.0)

Thoughts about responsibility for learning

	Str. Agree	**Agree**	**Neutral**	**Disagree**	**Str. Disagree**	**Missing data**
Want instructors to do all the talking in class	175 (12.7)	307 (22.3)	405 (29.4)	293 (21.2)	165 (12.0)	34 (2.5)
Expect instructors to know all the answers	143 (10.4)	350 (25.4)	401 (29.1)	289 (21.0)	157 (11.4)	39 (2.8)
Want lectures to cover the readings	435 (31.5)	500 (36.3)	277 (20.1)	95 (6.9)	36 (2.6)	36 (2.6)
Expect instructors to be funny and engaging	403 (29.2)	468 (33.9)	340 (24.7)	79 (5.7)	50 (3.6)	39 (2.8)
Prefer classes where students are actively engaged	464 (33.6)	418 (30.3)	288 (20.9)	115 (8.3)	57 (4.1)	37 (2.7)
Prefer instructors to give students the answers	111 (8.0)	219 (15.9)	485 (35.2)	341 (24.7)	181 (13.1)	42 (3.0)
Prefer instructors make students find the answers	162 (11.7)	367 (26.6)	562 (40.8)	174 (12.6)	75 (5.4)	39 (2.8)

DISCUSSION

Most recently, researchers have called for closer and more creative collaborations among the various stakeholders on college campuses concerned with student success (administrators, student affairs staff, faculty and others) as they work to address the needs of their student bodies (Conrad & Gunter, 2000; Cross, 2000; Kuh & Banta, 1998). To be sure, self-report survey instruments have their methodological limitations (Stage, 1992), and the analyses we have reported here only begin to scratch the surface of our data, as what we have provided is descriptive and correlational in nature. Nonetheless, we believe that these findings help sharpen our focus on some of the strengths and limitations that students bring to their college efforts, and shed light on ways to support students as they pursue their college objectives. To the degree that the patterns we have found can be generalized to students at other educational institutions, the results that we have reported may also serve to correct misimpressions about the students on other college campuses. In closing, we briefly highlight what we feel are some of the implications of the findings we have presented.

- First, the students who participated in this study were, indeed, quite heterogeneous, both in terms of the traditional demographic variables considered in much of the extant literature on college students, and in terms of their study behaviors and their attitudes and expectations about school. The participants in the present study varied significantly in how much time and effort they devoted to their studies, in how much and how well they took notes, in how much responsibility they were willing to take for their own learning, and in how much

they expected or wanted their instructors to do the work or them. To the degree that this diversity is typical of the U.S. college population in general, it must be borne in mind as researchers and practitioners address issues of teaching and learning in ways that are sensitive to the unique needs of the myriad subpopulations of students on today's campuses (Hoover, 1997). Assessments of students' motivational profiles and attitudes about studying and learning, administered either formally or informally, by student affairs personnel, by academic advisors or by faculty, could help to ensure that students remained on track, and that potential problems be identified in a timely manner.

- Second, although in most instances, student variables were similarly associated with each of the four indices of success, in several instances, we found noteworthy differences. For example, although GPA was associated with the number of hours students were employed, none of the indices of "mastery orientation" was. And conversely, although GPA was not systematically related to students' sense of responsibility for their own learning, all three indices of "mastery orientation" were. Thus, GPA certainly serves as a useful index of success in many contexts, but we should not neglect elements of students' motivational profiles, such as how perseverant they are willing or able to be, how resilient and undistracted they are able to be in the face of difficulty or failure, and how they perceive their instructors when we draw conclusions about who is succeeding and who is struggling on our campuses. By focusing exclusively on GPA, one might well miss

those students who are earning good grades at the expense of healthy motivational profiles (the "learned helpless" students and the excessively driven "overachievers," Covington, 1984, 1999), and one might underestimate the resilience of those students whose grades may be mediocre, but whose willingness to strive for mastery and to persevere will enable them to succeed.

- Third, our analyses revealed systematic, albeit complex links between the components of self-regulated and self-directed learning that we examined (time and effort management, specific study activities, and attitudes about responsibility) and students' success. To the degree that this phenomenon is not limited to the students who participated in this study, this underscores the importance of ensuring that the complaint many students voice that they have not had adequate opportunities to learn to be autonomous, self-sufficient and self-directed in their approach to their schoolwork, be addressed. This would no doubt lead to discussions of who is responsible for providing such opportunities, and how, and of how to articulate expectations of students across educational levels.

- Fourth, in a related vein, many of the findings reported here suggest that students could really benefit from advice and mentoring as they assess their strengths and resources, and as they draw upon them to meet their academic challenges. Given our findings about

note-taking, language fluency, and willingness or ability to use instructors as resources, to name just a few, it is clear that although our campus offers many support services to students, they either do not realize that they should avail themselves of these resources, or they don't know how to find them. Again, it is an empirical question whether and how much this is a problem on other campuses, but to the degree that it is not uncommon, perhaps, the professional community could begin by figuring out ways to help students use the existing support structures more effectively.

And finally, although this snapshot of the students' world and worldview has been informative, longitudinal data, chronicling changes in students' attitudes and beliefs over the course of their college tenure, as well as changes in their relationship to success, retention, or both would be even more valuable to our collective efforts to support our students.

Surely, the issues we have raised and the patterns we have reported will resonate among student affairs personnel from colleges and universities across the United States. We hope this study will stimulate discussion and help to focus inquiry elsewhere as, collectively, we try to meet the needs of our student populations while maintaining appropriate levels of academic rigor.

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APPENDIX.

Scales and Items Used to Assess Students' Achievement Motivational Profiles

Scale: Perseverance (4 items, α = .7346)

Indicate how much you agree or disagree with the following items
(1 = *strongly agree*; 5 = *strongly disagree*)

- If I get a poor grade on a test, it makes me want to work even harder for the next test

- If I get a poor grade on a test, it makes me not want to bother trying for the next test (reverse-scored)

- When I am faced with a challenging assignment, I hang in there until it is done

- When I am faced with a challenging assignment, I give up easily (reverse-scored)

Scale: Task Involvement (4 items, α = .7194)

Indicate how much you agree or disagree with the following items
(1 = *strongly agree*; 5 = *strongly disagree*)

- When I have an important test, I am able to focus on my work easily

- When I have an important test, I am distracted by fears of being under-prepared (reverse-scored)

- When I have an important test, it makes me dwell on how hard the material is and I can't concentrate (reverse-scored)

- When I am faced with a complicated question, I get confused by all the possible answers (reverse-scored)

Scale: Teacher Rapport (3 items, α = .7101)

Indicate how much you agree or disagree with the following items
(1 = *strongly agree*; 5 = *strongly disagree*)

- I feel comfortable with my instructors

- I think of my instructors as resources to help me learn

- I feel comfortable asking questions in class

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