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Student-Faculty Relationships and Intellectual Growth among Transfer Students

Increasing costs of higher education and growing competition for good students are placing campuses under pressure to document the educational benefits of programs and services they provide for students. Parents, trustees, state officials, and members of accreditation teams are only some of the individuals interested in assessing the results of the instructional enterprise.

There has been an enormous amount of research on college students in the past three decades. The extensive literature reviews by Bowen [2], Feldman & Newcomb [6], Hyman et al. [9], Lenning [11], and Pace [12] reveal that most studies have examined student academic performance, attrition/persistence, and personality development. Only a modest number of studies have addressed the development of intellectual skills during college.

At the same time, the higher education community has made many claims regarding the cognitive benefits of attending college, but the evidence supporting these claims is far from complete. What is known on the topic has been based largely on research conducted either on freshmen or on students who begin and complete their education at a single institution. Although that may indeed include a majority of the students in institutions of higher education, one significant subgroup of the college population—the transfer student—is generally not represented in the research on educational outcomes.

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There are both educational and economic reasons for being interested in the intellectual growth and collegiate experiences of transfer students. They constitute a significant and growing population, and at the majority of four-year colleges and universities, between one-fifth and one-third of the bachelor's degree recipients began their freshman year at some other institution. Campus enrollment management efforts, even the economic stability of many colleges, may depend on successfully attracting transfers.

In an educational sense, obtaining information about each of the major subgroups of the college population is important to assist our institutions in better serving their students. We know very little about the transfer experience and its impact on student growth. Research on transfer students has focused primarily on their academic performance and on comparisons of the characteristics of transfer and native students, particularly community college transfers [8, 19]. A review of the literature uncovered no studies of the intellectual development of transfer students.

The study reported here examines the intellectual development of transfer students and focuses on their interaction with faculty. Given the basic educational purposes of colleges and universities (to impart knowledge and academic skills), the interaction between faculty member and student is particularly important. In his national study Astin [1] found that students who interact more frequently with faculty reported significantly greater satisfaction with the college environment. Chickering [4] is among the authors who have suggested that when student background traits and the organizational characteristics of an institution are taken into account, interactions with the major agents of socialization on campus are a particularly important source of influence on student development.

The positive effects of faculty-student interaction on student academic achievement, intellectual development, and career aspirations have been reported in several studies. Centra and Rock [3] concluded that faculty-student interaction was linearly related to achievement, that students learned more if they felt that faculty were readily accessible, interested in teaching, and interested in students as individuals. In their review of the literature, Feldman and Newcomb [6] found that formal and informal contact with faculty outside the classroom increased as the students progressed through college and that faculty were seen by students to be important in their influence on intellectual development and on occupational and career decisions.

In one of the most extensive studies on student-faculty interaction,

conducted by Wilson, Gaff, Dienst, Wood, and Bavry [27], students with greater amounts of interaction perceived that they had made more progress in a variety of academic skills and expressed greater satisfaction with their overall college experience. Endo and Harpel [5], looking at the impact of student-faculty interaction on student outcomes after four years at one institution, found that the perceived helpfulness of the faculty and the frequency of informal student-faculty interaction had significant positive effects on intellectual outcomes.

There have been several studies of faculty-student interaction by Pascarella and Terenzini and their associates. Their research in general documents the importance of student-faculty contact as an influential factor in student achievement, persistence/attrition, academic skill development, and personal development [14, 15, 16, 22, 23, 24, 25]. From the literature it is widely believed that students grow intellectually from faculty contact outside the classroom. A student's informal association with faculty is seen as an important contributor to student social integration, satisfaction, aspirations, values and attitudes, as well as to intellectual growth and academic performance.

Theoretical Framework

The conceptual framework for the research presented in this article is derived from the work of Spady [20, 21], Tinto [26], and Pascarella [13]. Spady, in his model of college student attrition, suggested the importance of student-faculty interpersonal relationships and interaction. He postulated that those relationships would have an influence on both intellectual interests and academic performance.

Pascarella, drawing on the work of Spady, Tinto, and others, developed a conceptual model for research on student-faculty informal contact and its relationship to other college experiences, educational outcomes, and attrition [13]. His longitudinal model postulates that student background characteristics (family background, aptitude, achievement, etc.) influence the selection of an institution to which a student applies. Once students are in attendance, those background characteristics influence student educational outcomes, as well as the frequency and quality of student non-classroom interaction with faculty. Institutional factors (such as admissions standards, faculty culture, and organizational size) also have an influence on learning. In addition, the model suggests that informal contact with faculty and other college experiences interact with each other and that both have a reciprocal relationship with educational outcomes such as academic skill development. Initial studies by Pascarella and Terenzini using

populations of freshmen at different universities have tended to support the model [17, 18, 22, 23, 24]. A similar study using a population of transfer students would lend additional strength to the model, especially since transfer students come to a campus with very different experiences than freshmen.

Transfer students are conceptually distinct from students who attend only one institution. They have, for whatever reason, given up one institutional affiliation for another. Thus, using the Tinto/Spady paradigm, they might be expected to have a lower level of institutional commitment than students attending only one institution. To the extent that subsequent institutional commitment is influenced by informal contact with faculty [13], these students might be expected to have fewer of these experiences than students at the same level who did not transfer. The effects of the number and quality of these contacts on intellectual outcomes for transfer students is not known.

Based on these various studies of freshmen and using similar instruments, this study examines the relation between transfer students' interactions with faculty and their intellectual growth. More specifically, it attempts to address the following question: With transfer student background and experiential variables held constant, is the overall quality and quantity of student-faculty interaction significantly and positively related to transfer student intellectual skill development and acquisition of knowledge?

Methodology

Design and Sample

The overall design of this study was longitudinal with data collected from transfer students who, in 1980, entered SUNY Albany, a public research university with selective admissions. Approximately one-third of the 3,000 undergraduates who are new to the campus each fall transfer from some other four-year or two-year institution.

Two survey instruments were developed. The initial questionnaire was sent to all entering transfer students during the first week of classes. Data were collected on a variety of student characteristics, prior college variables, and academic and career goals. Usable responses were received from 400 students (48 percent). In April 1981, a follow-up survey was mailed to all 440 previous respondents and data were gathered on their various collegiate experiences during 1980-81. Usable responses were received from 231 students (52.5 percent of the original 440 respondents and 25 percent of the total entering group of transfer

students). Chi square goodness-of-fit tests indicated that the 231 respondents were representative of the transfer student population with respect to age, sex, parents' education, type of institution previously attended, grade point average (GPA) at the previous institution, and on-campus versus off-campus housing.

Criterion Measures

This study uses two measures of intellectual growth: (1) *Intellectual skill development*—a scale of items on which students reported their development of intellectual skills such as learning to apply fundamental principles, critically evaluating ideas, being creative, thinking analytically, and gaining factual knowledge; and (2) *Academic content acquisition*—a scale of items on which students reported their progress in understanding a particular discipline's schools of thought, research methods, and relatedness to other disciplines. The items on both these scales were derived from the studies by Pascarella and Terenzini [18] and Terenzini et al. [24, 25], and had internal consistency (alpha) reliabilities of 0.86 and 0.79, respectively.

Independent Variables

The quality and quantity of faculty-student contact beyond the classroom serve as the independent variables of principal interest in this study:

1. *The frequency of transfer student informal contact with faculty outside the classroom that lasted ten minutes or more.* The frequency of informal contact with faculty was measured by questionnaire items that asked students to estimate the number of times they met informally with faculty members outside of class for each of the following reasons: (a) to get basic information and advice about their academic program; (b) to discuss intellectual and course-related matters; (c) to discuss matters related to their future career; (d) to help resolve a disturbing personal problem; (e) to discuss a campus issue or problem; and (f) to socialize informally. Only contacts of ten minutes or more were counted. These items were adopted from an instrument used by Wilson, Gaff, Dienst, Wood, and Bavry [27]. The first two items were summed to obtain a measure of faculty-student academic interaction; the others were combined to assess interaction on nonacademic matters.
2. *The quality of informal contact with faculty.* The quality or effectiveness of the relationship between students and faculty was

measured by responses to statements in a series of Likert-type scale items designed by Pascarella and Terenzini [18] to operationalize the constructs of academic and social integration as defined by Tinto [26]. Based on a factor analysis, two scales, "faculty relations" and "faculty concern for teaching and student development," are used in this study as measures which most directly reflect the *quality* of the faculty/student relationship. Consisting of four items, the faculty relations scale asks students to report the extent to which they have developed close personal relationships with faculty and the extent to which those relationships have influenced their intellectual growth, personal growth, and career goals. The internal consistency reliability (alpha) of the four items is .88. The faculty concern scale consists of five items (alpha = .75) which ask for student perceptions about their faculty as being superior teachers who are genuinely interested in teaching, who take the time to meet with students outside of class, and who are concerned about student growth both inside and outside the classroom.

Control Measures

Because this study focuses on the impact of faculty contact apart from the influence of other collegiate and precollege experiences, the following were controlled statistically:

1. Student characteristics (age, sex, parents' formal education).
2. Prior education variables (high-school average, prior college GPA, number of transfer credits).
3. Student goals (intended major — liberal arts versus professional; the importance of a number of educational, intellectual, and career goals rated by the student on an instrument derived from Wilson et al. [27]).
4. Campus variables (peer relations, extracurricular activities, interaction with staff, and level of classroom and social involvement were reported by the students on instruments developed in the earlier studies by Pascarella [18] and Terenzini et al. [24, 25]).

Analytical Procedures

Before analyzing the results, a principal components analysis was conducted on the items borrowed from the earlier studies to determine their statistical appropriateness for use with a population of transfer students. The item factor loadings are similar to those in the Teren-

zini and Pascarella studies cited above. Internal consistency (alpha) reliabilities for these scales range from 0.71 to 0.88.¹

Following this principal components analysis, hierarchical, setwise, multiple regression was the analytical method used to examine the relationships among the variables. The beta weights were examined to discover the unique contribution that each variable makes to the variance in the two measures of intellectual growth. Because beta weights are conservative indicators of the importance of each variable's contribution to the explained variance, the partial correlations were also reviewed as less conservative indicators of each variable's role. (Partial correlations control only for those variables contained in sets that have already been entered in the regression model.) Beta weights and partial correlations were judged to be "significant" when the *F* value reached a probability level of 0.05 or less.

Results

Table 1 displays the means and standard deviations of all the variables in the study for the separate and combined populations of transfer students. The table shows that the average transfer student was 21.6 years old and received 51.4 transfer credits from prior educational endeavors. Most transfer students lived off-campus and had about eleven contacts with faculty outside the classroom lasting ten minutes or more—7.5 to discuss academic or intellectual matters and 3.6 to discuss personal/social matters. Transfer students in general reported greater gains during the year in intellectual skill development than in academic content (3.17 vs. 2.93, respectively, on a scale where 2 = slight, 3 = moderate, 4 = great). Examining the separate four-year and two-year groups, the transfers from four-year colleges, on average, were more than two years younger ($p < 0.001$), earned a higher academic average in high school ($p < 0.05$), and transferred fewer credits ($p < 0.001$). The four-year group also reported two more contacts with faculty and two more with staff than their counterparts from two-year colleges did, but these differences were not statistically significant, nor were any other differences between the two groups on the other variables.

Table 2 arrays the beta weights from the multiple regression with intellectual skill development as the criterion measure. The relative

¹More information about the contents of the various scales and their psychometric characteristics can be obtained from the senior author.

TABLE 1
Means and Standard Deviations for all Variables in the Study

	All Transfers (N = 231)		Community College (N = 128)		Four-Year College (N = 103)	
	Mean	SD	Mean	SD	Mean	SD
<i>Control Variables:</i>						
<i>Background:</i>						
Age	21.61	5.46	22.78	6.82	20.18	2.46
Sex (% female)	0.56	0.50	0.56	0.50	0.56	0.50
Parents' education	7.60	2.41	7.27	2.33	7.98	2.44
<i>Prior Education:</i>						
High-school average	84.74	11.35	83.39	12.14	86.39	10.18
Prior college GPA	3.10	0.58	3.13	0.64	3.06	0.49
Credits transferred	51.44	17.30	57.69	13.51	43.88	18.45
<i>Goals:</i>						
Intended major (liberal arts vs. professional)	1.29	0.45	1.39	0.49	1.17	0.37
<i>Importance of:</i>						
liberal arts education	3.28	0.71	3.23	0.73	3.33	0.69
understanding subject area	3.44	0.68	3.43	0.67	3.45	0.70
creative & analytical thinking	3.47	0.64	3.46	0.63	3.49	0.65
gaining career skills	3.66	0.59	3.70	0.61	3.63	0.56
gaining skills for graduate school	3.24	0.82	3.28	0.83	3.18	0.81
<i>Campus Experiences:</i>						
Housing (% on campus)	0.36	0.48	0.35	0.48	0.38	0.49
Peer relations	3.56	0.97	3.44	1.00	3.69	0.93
Extracurricular activities	8.11	13.05	8.19	12.95	8.04	13.30
Interaction with staff	8.19	13.62	7.09	10.35	9.63	16.80
Social involvement	12.00	3.58	11.50	3.52	12.73	3.52
Classroom involvement	19.90	3.14	19.46	3.21	20.38	2.89
<i>Independent Variables:</i>						
<i>Frequency of Faculty/Student Contact:</i>						
Academic/intellectual matters	7.50	9.69	7.03	9.88	8.14	9.50
Personal/social matters	3.55	5.74	3.06	5.34	4.18	6.20
<i>Quality of Faculty/Student Contact:</i>						
Faculty relations	2.86	1.08	2.72	1.07	3.02	1.07
Faculty concern with teaching and student development	3.26	0.84	3.17	0.91	3.37	0.73
<i>Criterion Measures:</i>						
Intellectual Skill Development	3.17	0.53	3.15	0.59	3.21	0.44
Academic Content Acquisition	2.93	0.65	2.90	0.69	2.98	0.60

magnitudes of the beta weights indicate for each population the comparative importance of each variable while controlling for all other variables in the model.² For the population of all transfer students, none of the background, prior education, and student goals variables had a significant association (at the 0.05 level) with the scale measuring intellectual skill development. However, one of the campus experience variables, the classroom involvement scale (beta = 0.29), was

²The unstandardized regression coefficients and other statistical data can be obtained from the senior author.

positively and significantly related to transfer student perceptions of their own intellectual growth.

When the faculty interaction measures were entered as a set, they accounted for a significant (4.7 percent) increase in explained variance. The most important contributor was the scale measuring faculty concern for teaching and student development ($\beta = 0.21$). The quality of faculty-student interaction was also measured by the "faculty relations" scale ($\beta = 0.09$) which, although not significant (at the 0.05 level) in its *unique* contribution to the explained variance, did have a significant *partial* correlation (partial $r = 0.15$) with reported

TABLE 2
Regression Beta Weights for Transfer Student Intellectual Skill Development

Variable	All Transfers (N = 231)	Community College (N = 128)	Four-Year College (N = 103)
<i>Control Variables:</i>			
Background:			
Age	-0.12	-0.16	0.00
Sex (% female)	0.00	-0.03	0.07
Parents' education	-0.02	0.02	-0.06
Prior Education:			
High-school average	0.07	0.10	0.01
Prior college GPA	0.02	0.03	0.03
Credits transferred	0.05	0.06	-0.07
Goals:			
Intended major (liberal arts vs. professional)	0.01	0.01	-0.02
Importance of:			
liberal arts education	0.02	0.05	-0.02
understanding subject area	0.12	0.15	0.03
creative & analytical thinking	0.13	0.10	0.24*
gaining career skills	0.04	0.02	0.07
gaining skills for graduate school	0.12	0.12	0.14
Campus Experiences:			
Housing (% on campus)	-0.04	-0.04	-0.03
Peer relations	0.10	0.16	-0.02
Extracurricular activities	0.00	0.01	-0.04
Interaction with staff	0.06	-0.01	0.17
Social involvement	-0.05	-0.07	0.07
Classroom involvement	0.29**	0.39**	0.15
<i>Independent Variables:</i>			
Frequency of Faculty/Student Contact:			
Academic/intellectual matters	0.05	0.04	0.11
Personal/social matters	-0.03	0.00	-0.03
Quality of Faculty/Student Contact:			
Faculty relations	0.09	0.07	0.04
Faculty concern with teaching and student development	0.21**	0.19*	0.23*
R² values:			
Degrees of freedom	0.36*** (22,208)	0.44*** (22,105)	0.34*** (22,80)
Adjusted R ²	0.30	0.32	0.15

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

intellectual skill development. Neither of the variables reporting the frequency of faculty-student contact displayed significant beta weights or partial correlations.

A comparison of the separate populations of two-year and four-year college transfers reveals more similarities than differences. The student background and prior college variables appear to have little relationship to the self-reported intellectual skills attained by each of the two populations of transfer students. With only one exception, transfer student' goals also had a nonsignificant relationship to the subsequent development of intellectual skills. That exception is the importance placed on creative and analytical thinking which proved to be significant for the population from four-year colleges (beta = 0.24). (For the transfers as a whole, creative and analytical thinking [beta = 0.13] had a significant *partial* correlation [$r = 0.25$] with the criterion variable.) The "classroom involvement" scale had a significant beta weight for the community college population (beta = 0.39) and a significant partial correlation ($r = 0.28$) for the group from four-year colleges.

A review of the faculty-student interaction measures reveals that a similar pattern of relationships held for the separate two-year and four-year populations. The "faculty concern" scale contributed significantly to the criterion variable but the other independent variables did not. (None of the partial correlations were significant either.)

The other criterion variable, "academic content," reflects student progress in acquiring knowledge in a particular discipline. Table 3 displays the regression results for academic content acquisition. The faculty interaction variables for the transfer population as a whole account for a statistically significant (4.7 percent) increase in the explained variance. The "faculty concern" (beta = 0.15) and "faculty relations" (beta = 0.16) scales are both positively and significantly associated with gains in academic content, whereas the frequency of contact variables again are not significant (at the 0.05 level). The "classroom involvement" and "social involvement" scales have significant partial correlations ($r = 0.25$ and 0.16 , respectively) with the criterion variable, even though their unique contribution to the main regression is not enough to gain significance. Placing a high importance on understanding the subject matter (beta = 0.14) and on gaining skills for graduate school (beta = 0.15) are significantly associated with academic content acquisition. Being a liberal arts major and placing a high value on a liberal arts education have significant partial correla-

TABLE 3
Regression Beta Weights for Transfer Student Academic Content

Variable	All Transfers (N = 231)	Community College (N = 128)	Four-Year College (N = 103)
<i>Control Variables:</i>			
Background:			
Age	-0.03	-0.06	-0.02
Sex (% female)	-0.02	0.04	-0.08
Parents' education	-0.04	-0.08	0.06
Prior Education:			
High-school average	0.06	0.03	0.14
Prior college GPA	0.02	0.03	0.03
Credits transferred	0.04	0.07	-0.02
Goals:			
Intended major (liberal arts vs. professional)	-0.12	-0.16	-0.19*
Importance of:			
liberal arts education	0.10	0.05	0.21*
understanding subject area	0.14*	0.10	0.25*
creative & analytical thinking	0.02	0.05	-0.02
gaining career skills	0.00	-0.01	-0.08
gaining skills for graduate school	0.15*	0.22*	0.05
Campus Experiences:			
Housing (% on campus)	-0.04	-0.01	-0.09
Peer relations	-0.08	0.00	-0.22
Extracurricular activities	0.05	0.10	-0.08
Interaction with staff	0.07	-0.08	0.27*
Social involvement	0.15	0.10	0.23
Classroom involvement	0.12	0.15	0.18
<i>Independent Variables:</i>			
Frequency of Faculty/Student Contact:			
Academic/intellectual matters	-0.07	-0.03	-0.28*
Personal/social matters	-0.02	0.06	-0.03
Quality of Faculty/Student Contact:			
Faculty relations	0.16*	0.07	0.33**
Faculty concern with teaching and student development	0.15*	0.20*	0.11
<i>R</i> ² values:			
Degrees of freedom	0.27*** (22,208)	0.30* (22,105)	0.44*** (22,80)
Adjusted <i>R</i> ²	0.19	0.16	0.29

p* < 0.05; *p* < 0.01; ****p* < 0.001.

tions (-0.16 and 0.22, respectively). None of the other background, goals, and campus variables are significantly related.

The community college population in Table 3 reflects a significant association between academic content and valuing graduate school skills (beta = 0.22) and faculty concern (beta = 0.20). Classroom involvement, faculty relations, and placing importance on subject understanding have significant partial correlations with academic content (0.30, 0.27, and 0.21, respectively).

The four-year population shows a curious pattern of beta weights.

In addition to the expected associations with strong faculty relations (beta = 0.33), faculty concern (partial $r = 0.21$), and classroom involvement (partial $r = 0.26$), academic content acquisition also is significantly associated with being a liberal arts major (beta = -0.19), valuing a liberal arts education (beta = 0.21), and placing a high importance on understanding the subject matter area (beta = 0.25). The Table 3 beta weights for peer relations, social involvement, and faculty academic contact are statistical artifacts because the zero order and partial correlations are low and not significant for the four-year group. Most puzzling, however, is the positive association with staff interaction (beta = 0.27). The more frequent the interaction with professional staff, the more academic content acquisition.

As can be seen from the two tables, then, the "faculty relations" and "faculty concern" scales are rather consistently associated with intellectual growth among transfer students, whereas the frequency of faculty-student contact is consistently unrelated to that reported growth. Another faculty-related measure, the "classroom involvement" scale, also is significantly associated with the growth measures. These results suggest that the mere frequency of faculty contact is not a contributor to transfer student intellectual growth; rather, the effectiveness of the faculty-student relationship is the key influence.

Limitations

These findings should be interpreted with a certain amount of caution. First, the data were collected at a single institution, from a single entering class in 1980. The virtue of a single campus study is that it controls for the differential impacts of institutions on students, but there is the danger that the results of the study reflect idiosyncratic characteristics of that campus and its student population. While other longitudinal studies at the same campus have revealed nothing unusual about the particular group of students who entered in 1980, one cannot be sure that the findings can be generalized to other institutions. The authors believe that these results should at least be suggestive of what might be found on other campuses [7, 10]. A second potential concern is that many of the measures used in the study are self-reported rather than measured objectively. For example, the actual frequency of faculty interaction may differ from that reported by the student, and we do not yet know how precisely students' reported perceptions of intellectual growth may correspond to more objective measures. Bowen [2] has noticed the general similarity between the results of cognitive outcome studies based on objective measures and

those derived from students' self-reports, but no study yet fixes the closeness of the correspondence with any certainty. Third, like almost all studies of student growth in the college years, the absence of a non-college control group raises a question about the degree of growth which can be unequivocally attributed to the collegiate experience. Likewise, a college control group of students who entered as freshmen would have made the results more useful. The results clearly indicate that students believed they grew intellectually during the year covered in this study, but some of that development may have resulted from simple maturation or from other influences quite outside the university environment.

Discussion and Conclusions

With background and experiential variables held constant, is faculty-student contact significantly and positively related to the intellectual growth of transfer students? Using two measures of self-reported gains in intellectual growth, it appears that the answer is a qualified "yes." While none of the items dealing with the *frequency* of student/faculty contact are significant, students' perceptions about the *quality* and strength of their relationships with faculty are significantly associated with two measures of intellectual growth. Students' involvement in and enjoyment of the classroom experience also proved to have a strong relationship to both measures of intellectual growth, especially for the population from community colleges, suggesting that for transfer students at least, what happens in the classroom is what counts.

That the "classroom involvement" scale, the "faculty relations" scale, and the "faculty concern" scale should all be related to perceptions of intellectual growth is not surprising, particularly when one looks at the statistical and conceptual complementarity of the three scales (zero order correlations among them range from 0.36 to 0.42). The "faculty relations" scale reflects the extent to which students have developed a close, influential relationship with at least one faculty member. The "classroom involvement" scale measures how frequently students enjoy their classes, express their views in class, and are intellectually stimulated by material covered in class. The "faculty concern" scale measures student perceptions of faculty as being genuinely interested in good teaching, being interested in student growth both inside and outside the classroom, and simply being available to students. It seems logical, then, that these reflections of faculty interaction will,

to some extent, vary together. However, the association between the three scales may also be due in part to their use in the same questionnaire, and thus may be partially a statistical artifact. There is, however, no way of ascertaining the extent to which this may have occurred.

The importance of classroom involvement in this study and in the 1982 and 1984 studies by Terenzini et al. [24, 25] certainly lends support to a variety of campus efforts to improve the instructional experience. Clearly suggesting that student intellectual growth is enhanced when faculty are perceived as devoted teachers, the results of this study and the items in these scales could be used to develop a description of the faculty who are most effective in educating students. Such faculty give meaningful out-of-class assignments, have intellectually stimulating class sessions that hold a student's attention, and encourage students to express their views in class. In addition, these faculty demonstrate a genuine interest in students and in helping them grow, are willing to spend time outside of class to discuss intellectual issues of interest to students, and demonstrate their interest in and enthusiasm for teaching. These faculty behaviors are strongly associated with student intellectual growth and appear to be much more important than the mere frequency of faculty-student contact. The results of this study suggest that campus attempts to involve faculty in non-academic student life activities must be justified on grounds other than promoting student intellectual growth, at least for transfers.

The separate analyses of transfer students from community colleges suggest some patterns of similarity, but involvement with faculty, both inside and outside the classroom, is especially important for developing the intellectual skills of the community college group. Their acquisition of knowledge was most strongly associated with the importance placed on graduate school.

The pattern of influential variables for the four-year group was less consistent between the two measures of intellectual growth, but in both cases, the effects from the quality or effectiveness of the faculty-student relationship proved to be substantial. The classroom experience failed to achieve statistical significance within the four-year group due largely to a problem of multi-collinearity in the data, as revealed by the significant partial correlations. Placing a high educational importance on creative and analytical thinking was an influential factor related to intellectual skill development among four-year transfers. Close faculty relations, a strong liberal arts orientation, a commitment to the subject area, and interaction with non-teaching staff were most strongly associated with acquiring knowledge. This last finding

is difficult to explain and is inconsistent with both theory and common sense. Apparently, these transfer students from four-year colleges view their contact with student affairs and professional advisement staff as a key ingredient in successfully capturing the knowledge to which they have been exposed. The four-year transfer group had significantly more frequent interaction with staff than did the community college group, and they may have been more sophisticated about seeking the help they needed.

This study used, for a population of transfer students, procedures of controlled correlation to demonstrate statistically significant associations between the perceived strength of faculty-student relationships and measures of education and growth. In so doing, the study lends support to the educational outcomes model developed by Pascarella [13]. These findings, however, also suggest that the mere frequency of contact with faculty has little intellectual or educational impact on transfer students, especially if it is devoid of genuine faculty concern for and interest in their students. This particular finding is not entirely consistent with three earlier studies [5, 24, 25], and suggests that transfer students may be importantly different from other student populations. It is, however, congruent with the earlier ones regarding the importance of the classroom experience for intellectual growth. Student enjoyment of and involvement in the instructional experience has clearly emerged from these studies as a consistent and influential contributor to cognitive development. In fact, faculty may be relieved to know that the things they do best appear to be the most influential.

Transfer students are self-selected persisters who are continuing their education, not beginning it. They are likely to possess the increased maturity that typically comes with age. Having already made the initial adjustments in the transition from high school to college, transfer students in general are likely to have specific academic and career goals, including a declared major. They change majors less frequently than freshmen and probably have a better sense of purpose and direction. Although transfer students are not particularly unique from other students as learners, their intellectual growth appears to be significantly enhanced by faculty relationships which are characterized by faculty interest and concern, rather than by frequent contact. The frequency of faculty contact generally was found to be a more important influence in the earlier studies using nontransfer populations.

Another conclusion to be drawn from this study is the consistent unimportance of student background and prior college variables on the intellectual growth of transfer students. These results are not unique

to this population [24, 25] and are consistent with the hypotheses of other writers who suggest that what happens to students after arriving on campus may be more influential than the individual differences they bring with them [1, 13]. For example, in this study the campus experience and faculty interaction measures explain over three times as much of the adjusted variance in student intellectual skill development, and twice as much of academic content, as the combined measures of background, prior college experiences, and goals did. As students advance into their college years, the influence of differences in their backgrounds becomes less, and the influence of college experiences becomes greater. The average transfer student in this study, however, was almost 22 years old and had enough transfer credits to qualify for junior-year status. An alternative explanation for these results, then, could be that of maturation. A study comparing freshmen, transfers, and "native" juniors would help shed light on the question.

After the inclusion of all variable sets in the regression analysis for all transfer students, only 30 percent of the adjusted variance in intellectual skill development (36 percent unadjusted) and only 19 percent in academic content acquisition (27 percent unadjusted) were explained. This suggests that other factors, not included in this study, play a role in transfer student intellectual growth. Those factors might include academic aptitude, personality variables, motivation, study habits, and the like. Future studies should attempt to take these into account.

Finally, the results reported here suggest a need for more detailed comparative investigation of the similarities and differences among freshmen and transfer students from four-year and community colleges. The theoretical models which describe the impact of college on students, as well as the practices of most campuses, would benefit from more information about the college experience as it differentially impacts particular groups of students. Varying outcomes are likely to result from varying experiences, and we need to increase our understanding of these complex interactions.

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