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ABSTRACT

The relationship between college students' goal and institutional commitments and their levels of academic and social involvement was examined. The study was longitudinal, examining all of the residential freshmen (N=670) who entered Mary Washington College (Virginia) in the fall of 1985, from a point prior to matriculation to a point late in the freshman year. Students were surveyed to determine goal commitment and institutional commitment, and background variables (including parents' educational levels, student's high school rank and Scholastic Aptitude Test scores, intended major, and gender) were controlled. It was concluded that college involvement can be predicted from levels of initial goal and institutional commitment. Specifically: (1) what students bring with them to college predisposes them to get involved, as background factors themselves account for 3% to 18% of the variation; (2) initial goal commitment is a significant predictor of most of the measures of students' academic and social involvement; and (3) initial institutional commitment was not associated with any of the measures of academic or social involvement after background variables were controlled. Appendices provide student background data, the survey instruments, and factor loading data. (KM)

COMMITMENT TO COLLEGE AND STUDENT INVOLVEMENT

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A great deal of attention has recently been given to the role that student involvement plays in a "quality" education. In 1984, the report of the National Institute of Education, Involvement in Learning, linked student involvement to a variety of desirable educational outcomes. This report concludes:

> There is now a good deal of research evidence to suggest that the more time and effort students invest in the learning process and the more intensely they engage in their own education, the greater will be their growth and achievement, their satisfaction with their educational experiences, and their persistence in college, and the more likely they are to continue their learning (National Institute of Education, p. 17).

As a result of many years of research on college students, Astin has proposed a unifying theory of student development based upon the concept of involvement. Student involvement may be defined broadly, encompassing all aspects of the college experience. According to Astin, "such involvement takes many forms: absorption in academic work, participation in extracurricular activities, interaction with faculty members and other institutional personnel, and so forth" (Astin, p. 157).

Two key constructs of the theory of student involvement are:

> The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.

> The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement (Astin, 1984, p. 298).

While it is a simple, straightforward approach to student development, Astin's theory has far-reaching implications for practitioners in higher educaiton. It is possible for educators to place too much emphasis upon pedagogies, methodologies, and programs without proper regard to their ability to motivate and engage student interest. Unless sufficiently motivated, students will fail to become involved, and the desired learning and developmental growth will not occur. Emphasizing the relationship between motivation as a psychological state, and involvement as the behavioral manifestation of that state, Astin observes, "the theory of student involvement encourages educators to focus less on what they do and more on what the student does how motivated the student is and how much time and energy the student devotes to the learning process" (Astin, 1984, p. 301).

Thus, an involvement-based theory of student development emphasizes the interactive nature of the educational process. The theory attributes responsibility for achieving educational outcomes to both the student and the institution. The college or university must provide opportunities to encourage high quality student involvement, while the student must demonstrate initiative to utilize those opportunities for personal growth. Commenting on this shared responsibility, Pace concludes:

> Surely the students are also accountable for the amount, scope, and quality of effort they invest in their own learning and development, and specifically in using the facilities and opportunities that are available in the college setting. Accountability for achievement and related

> student outcomes must consider both what the institution offers and what the students do with those offerings (Pace, 1979, p. 4).

College admissions officers are concerned with the characteristics of incoming students and how these entering characteristics affect the subsequent involvement of students in the academic and social systems of the college. The primary role of the college admissions officer is to assist young people in making effective transitions from high school to appropriate collegiate settings. This philosophy is reflected clearly in the "Statement of Principles of Good Practice" of the National Association of College Admissions Counselors (NACAC, annual). Thus, the professional admissions officer is committed to the goals of student development in the broadest sense. He is concerned not only with bringing students into the institution, but with what happens to those students once they enter college.

Students' reasons for pursuing higher education may be varied, complex, and subtle. Their reasons for choosing to attend particular institutions are equally complicated. Recent data from a national sample indicate that, of students entering moderately selective public four-year colleges, 30.1 percent were attending institutions that were not their first choce. In addition, 12.3 percent of these students indicated chances are very good that they will transfer to another college, and only 52.1 percent believed they would be satisfied with college (Astin, et al., 1984, pp. 77, 85). Such figures are surprising in light of the much heralded shift to a "buyer's market" orientation in higher education due to the declining population

of traditional college-age individuals. However, substantial numbers of students clearly are enrolling in these institutions with ambivalence about the college and an uncertain attitude toward matriculation.

This phenomenon of weak institutional commitment on the part of many entering students may pose a dilemma to admissions officers and to other educators. If pre-college perceptions and expectations of students are related to their behavior in college, levels of student commitment to college should be more closely considered at the time of admission. This is done to a minimal extent through early decision application plans and through personal interviews with applicants, but there is rarely any systematic consideration of students' commitment to college in the admissions process.

The problem of marginal institutional commitment may be especially pronounced in the case of moderately selective colleges and universities. These institutions, unlike open admission colleges and universities, can choose students from an applicant pool on the basis of various academic and personal criteria. However, moderately selective institutions are unable to project the prestigious images of highly selective, and highly desirable, colleges and universities. Therefore, they cannot presume that most entering students feel strong commitment to the institution.

Commitment to college remains an important problem after students have matriculated. Once in college, students must begin a continual process of re-evaluating their initial commitment

levels. Pre-college commitments are based largely upon students' expectations of the college experience. Such predispositions will either be confirmed or changed by the reality of personal experiences in college.

In order to promote active, high quality involvement in college, it is important that educators understand better the attitudes students hold toward college, and how these are interrelated with the students' patterns of involvement in college. This knowledge is critical to admissions officers who select students for entry to institutions of higher education. It is equally important to all who teach, counsel, or work with college students; to those who design programs, curricula, and facilities; and to those who study student achievement, satisfaction, and retention. Astin stresses the need for more research "to determine whether particular student characteristics . . . are significantly related to different forms of involvement and whether a given form of involvement produces different outcomes for different types of students" (Astin, p. 306).

A useful framework for investigating the interactive nature of these relationships is provided by Tinto's (1975) model of dropout from college. The model is based upon Durkheim's theory of suicide, suggesting that dropout is analogous to suicide in the wider society in that it results from an individual's insufficient integration into the social systems of the institution. Tinto derived elements of the model from a synthesis of many separate studies of college student attrition.

In Tinto's model, a student's background characteristics, experiences, and attributes contribute to the formulation of certain pre-enrollment levels of commitment. These commitments reflect the individual's initial motivational levels, and are of two types. The first, "educational goal commitment," indicates the level and intensity of the student's motivation to pursue and complete a college education. According to Tinto, goal commitment "is an important input variable in the model of dropout because it helps specify the psychological orientations the individual brings with him into the college setting--orientations that are important predictors of the manner in which individuals interact in the college environment" (Tinto, p. 93). The second variable, "institutional commitment," indicates the strength of the student's motivation to attend one college or university over other possible choices. This concept "permits inclusion in the model of data specifying the dispositional, financial, and time commitments individuals make in attending a particular institution" (Tinto, p. 94).

Tinto's model is longitudinal, emphasizing the "process of interactions between the individual and the academic and social systems of the college" (Tinto, p. 94). Students' initial commitment levels influence, and in turn are influenced by, the degree of their integration, or involvement, in the college experience. Tinto states that "it is these goal and institutional commitments that are both predictors of and reflections of the person's experiences, his disappointments and satisfactions in that collegiate environment" (Tinto, p. 96).

Thus, according to the model, a student's pre-college goal and institutional commitment levels help determine how he will utilize the academic and social opportunities present in the college environment. Further, once the student is in college, his involvements with the academic and s cial systems of the institution continually act to alter or reinforce his original commitment levels. There is a reciprocal relationship between commitment and involvement.

A student who enters an institution highly committed is likely to seek active involvement in the college experience, which is likely to result in even greater commitment, thus creating an ever-building cycle of reinforcement. Tinto observes that "the higher the degree of integration of the individual into the college systems, the greater will be his commitment to the specific institution and to the goal of college completion" (Tinto, p. 96). The opposite effect also may be evidenced, where a student enters with marginal commitment, fails to become involved, commitment declines even further, and the cycle eventually culminates in dropout. Between these extremes are possible a variety of patterns of student involvement and commitment.

The purpose of this study is to investigate the relationship between college students' goal and institutional commitments and their levels of academic and social involvement. Figure 1 shows the conceptual model to be used as adapted from Tinto's earlier work (1975). The model does not include "outcomes" of college such as student satisfaction, student development, or student

attrition. Based upon the literature and research, it may be assumed that commitment to college and involvement in college, while desirable in themselves, are nevertheless process variables that affect desirable educational outcomes. Research questions posed for this study are two-fold:

(1) What is the relationship between pre-college commitment and later academic and social involvement?

$$B + C_1 \sim I$$

(2) To what extent do pre-college commitment levels and levels of student academic and social involvement predict the commitment of students at the end of their freshman year?

$$B + C_1 + I \sim C_2$$

In both cases, selected background factors (B) were controlled. Involvement (I) becomes the dependent measure in question one and end-of year commitment (C_2) becomes the dependent measure in question two.

DESIGN AND METHODOLOGY

The overall design of this study was longitudinal, examining a single entering college class from a point in time prior to matriculation to a point in time late in the freshman year. The study group consisted of all of the residential freshman (N = 670) who entered in the fall of 1985 at Mary Washington College. Located in Fredericksburg, Virginia, the institution is a public, four-year college of liberal arts and sciences. Formerly the women's undergraduate college of the University of

Virginia, Mary Washington College has been coeducational since the early 1970s. It enrolls 3000 students of whom about 2400 are degree-seeking undergraduates. Eighty percent of the students are female, twenty percent are male. Mary Washington College is considered a moderately selective college with average combined SAT scores at about 1000.

Before testing the research questions, suitable measures were needed for the background variables, pre-college goal commitment, pre-college institutional commitment, end-of-year institutional commitment and student involvement. The background variables chosen for control purposes included intended major program, father's educational level, mother's educational level, high school rank in class, SAT math score, SAT verbal score, gender, place of residence (Virginia resident or non-Virginia resident), distance from home to college and "early decision" (admitted early on a first-choice basis or not). This information was obtained directly from student records. Appendix 1 lists these variables and the distribution of the study group for each variable.

A major task of this study was the development of comprehensive measures of both goal commitment and institutional commitment (including "pre" and "post" versions of the latter). Building on the work of Astin, et al. (1984), Bean (1982), Pascarella and Chapman (1983), Porter, et al. (1974), and Tinto (1975), a survey instrument was designed for this purpose. The instrument (see Appendix 2) represents an attempt to synthesize several elements used by other researchers into a comprehensive

measure of goal and institutional commitment.

The first six items on the instrument comprise the goal commitment survey. The respondent is asked to estimate his chances of completing a bachelor's degree and of doing so without temporary interruption. Other items measure the level and certainty of the student's degree aspirations. Finally, items are included to measure how much importance the student attaches to a college degree as a means of achieving both career success and personal satisfaction in life.

Each item presents a Likert scale of response options. Items are scored so that the highest weight is assigned to responses most indicative of strong commitment to complete college. When the individual item scores are summed to form a scale score, goal commitment can range from 6 to 28. In this study, however, it was anticipated that scores would be distributed toward the high end of the range since all students already would have decided to attend college.

Two distinct surveys of institutional commitment were devised. This is because of the changing nature of institutional commitment. A student's pre-college institutional commitment is largely a reflection of his or her reasons for choosing the particular college. Once the student has enrolled in college, institutional commitment reflects a decision to continue attending the same college rather than seeking transfer.

Institutional commitment in higher education is analagous to the concept of organizational commitment among employees in the work setting. The institutional commitment survey developed for

this study drew heavily for its content upon the organizational commitment scale of Porter et al (1974). The Porter et al. survey assesses the strength of commitment based upon the individual's willingness to identify with the organization, to exert effort on its behalf, and to maintain membership in the organization.

The pre-college survey of institutional commitment was made up of six items. Two of these items combine to form a single variable labeled "choice," which reflects the number of college choice options the student had available. Greatest institutional commitment would be demonstrated by students who freely chose the college after receiving acceptance from all other institutions to which they applied, or by students who applied only to Mary Washington College.

The next two items demonstrate the attractiveness of the institution to the student and his or her primary rationale for selecting the college. Respondents are asked to rank the college as a choice and to reveal their main reasons for attending, if the college was not viewed as first choice. Students who were attending the institution by default (primarily because they were denied admission to more desirable institutions) would demonstrate low institutional commitment.

The remaining two items ask the respondents for opinions about the college. One item asks the student how certain he or she is of having made a good college choice. The last item asks for the likelihood of the student's eventual transfer to another college or university.

Responses to the pre-college institutional commitment items also represent a Likert scale, with high scores most representative to strong institutional commitment. The item scores are added together to form a scale score ranging from 6 to 23.

The end-of year survey of goal commitment included the same six items as on the pre-college survey. However, the end-of-year institutional commitment items wre modified to reflect the perspective of a student deciding on the basis of a year's experience whether to transfer to another college (as opposed to deciding upon a particular college as a high school student). This instrument included seven items, of which only two were repeated from the pre-college survey. The two repeated items were those asking the student to estimate her chance of transfer to another inscitution and to indicate her certainty that the original decision to attend the institution was correct. The other items ask the likelihood of the student's re-enrollment for the next term, the importance she attaches to graduation from this particular college, reasons for wishing to transfer, whether she would recommend the institution to others, and whether the student is proud to tell others about attending the college. As with the other commitment surveys, these items elicit responses on a Likert scale. The item scores may be summed to form an overall score for end-of-year institutional commitment ranging from 7 and 33.

Both the goal and institutional commitment scales were pilot tested using a random sample of 50 prospective freshmen enrolling at Mary Washington College in the fall of 1985. A test-retest

procedure, several checks of concurrent validity and internal consistency were all found to be at acceptable levels. In addition, a factor analysis was performed on the commitment items to see whether in fact the instrument was measuring two distinct constructs. The results appear in Appendix 3 and in general show that the first 6 items clustered together in a common factor (goal commitment) and most of the remaining items loaded upon another factor (institutional commitment). The end-of-year scale of institutional commitment factored even more clearly into two distinct dimensions.

Freshman year academic and social involvement were measured by a portion of the College Student Experiences Questionnaire (CSEQ), Second Edition (Pace, 1983). This instrument includes fourteen scales which measure the quality of effort expended by college students in utilizing a variety of common campus faciltities and opportunities. The scales take into account both quantitative and qualitative dimensions of involvement in each activity. The fourteen scales, and the underlying quality dimension of each, are shown in Appendix 4.

Each quality of effort scale is comprised of a list of several activities, arranged in a hierarchical order. Students respond by indicating how frequently they have engaged in each activity during the current academic year. Response choices of "very often," "often," "occasionally," and "never" are awarded scores ranging from four points to one point. Most scales consist of ten items, and therefore, most scale scores range between 10 and 40. However, three scales are comprised of twelve

items each, with scale scores ranging from 12 to 48, and one scale has only six items, with scale scores ranging from 6 to 24. The reliability, validity and factor structure of this instrument has been reported elsewhere (Pace, 1984) and appears to be acceptable.

Tinto has suggested that students interact with the college environment in two essentially separate spheres--the academic system and the social system. Tinto notes that "a person may be able to achieve integration in one area without doing so in the other," but that "one would expect a reciprocal functional relationship between the two modes of integration" (Tinto, p. 92). Tinto further postulates that the degree of academic integration is more strongly related to the student's goal commitment, while the degree of social integration is more strongly related to the level of institutional commitment.

Because of these structural components of the model, an attempt was made to group the fourteen quality of effort scales along two coherent dimensions representing overall academic and social involvement. The justification for combining the individual scales into composite academic and social indices was provided by results of factor analysis and reliability estimates.

Appendix 5 shows results of the factor analysis using all fourteen quality of effort scales. The procedure utilized the varimax orthogonal rotation method of solution. The three-factor specification provided the solution with the maximum interpretability.

Seven of the fourteen scales loaded heavily on the first

factor. These were: Student Union; Clubs and Organizations; Personal Experiences; Student Acquaintances; Dormitory; Topics of Conversation; and Information in Conversations. Five of the quality of effort scales loaded most heavily on a second factor. These were: Library Experiences; Experiences with Faculty; Course Learning; Experiences in Writing; and Science/Technology. The third factor received a heavy loading only from the Art, Music, Theater scale.

Two observations should be noted in these factor analysis results. First, the Athletic and Recreation Facilities scale was the only one of the fourteen scales which failed to load highly on any factor. It was, however, most closely associated with the first factor. Second, the Clubs and Organizations scale loaded on both the first and second factors, although its loading was slightly higher on the first factor. This seems reasonable, since the activities of some college clubs represent extensions of the academic program while most others serve a function that is primarily social.

Clearly, the first factor resulting from this analysis represents a social involvement dimension. It includes activities scales related to peer group associations and extracurricular activities. These are components of social integration specifically identified by Tinto (p. 107).

Classifying the third element of social integration defined by Tinto, student-faculty interaction, is somewhat problematic. While Tinto acknowledges that involvement with faculty increases students' integration in both the social and academic spheres

(p. 109), he places this component within the social system of his model. Other researchers have also noted the dual role of faculty contact in promoting student academic and social integration (Terenzini and Pascarella, 1978; Bean and Kuh, 1984).

In the present study, the Faculty Experiences scale clustered with other scales along the dimension that would best be described as academic involvement. Therefore, in subsequent analyses, faculty experiences were treated primarily as a component of the academic system, and this measure became a subscale of the academic involvement index.

Despite the finding that two scales (Athletic and Recreation Facilities and Art, Music, Theater) did not load onto the social involvement factor, it was felt that these represent important aspects of extracurricular life for many students. Therefore, it was decided not to eliminate the scales from the study, but to combine them with the other seven scales in forming the overall social involvement index.

Additional support for the grouping of the involvent scales along academic and social dimensions was provided by Pace's factor analysis on the original quality of effort measures (1979). This analysis has revealed that the scales clustered into three factors. Two of these factors, labeled by Pace as Personal-Interpersonal Experiences and Group Facilities and Opportunities, were comprised of essentially the same scales as the present social involvement factor. Similarly, Pace's third factor, called Academic-Intellectual Experiences, was very similar to the academic involvement factor in this study.

Once it was determined that the scales could be divided along two generally consistent dimensions, the overall indices of academic and social involvement were formed by simply adding together the component scale scores. Reliability was examined for each composite index by computing internal consistency and found to be acceptable (α = .68 for academic involvement index; = .77 for social involvement).

A total of 670 incoming residential freshmen students were sent the survey form to assess initial commitment in July, 1985. The response rate after follow-up procedures was 94.8 percent (total of 635 persons). Of the 670 freshmen, 46 withdrew from college before the end of the academic year, leaving 624 who were asked to complete the spring questionnaire in April, 1986. A total of 442 students (70.8 percent) returned surveys, of which 435 were useable (69.7 percent). These 435 students constituted the group in this study. A comparison of the background characteristics of this group with the 624 potential subjects who qualified for the study is shown in Appendix 1. Chi-square tests show that the study group was indeed representative of the freshman class on all variables examined.

The primary analytical technique used to answer the research questions was multiple regression analysis. A series of procedures was performed, utilizing the subprogram NEW REGRESSION of the Statistical Package for the Social Sciences (Hull and Nie, 1981). In addition to the results of the multiple regression analyses, all relevant descriptive statistics were computed. These analyses and findings are reported in the next section.

RESULTS

The first research question posed earlier in this paper can be restated in more technical terms as follows: when students' individual background differences are controlled, are different pre-college levels of goal commitment and institutional commitment associated with different levels of academic and social involvement during the freshman year at a moderately selective public four-year college?

In symbolic form:

$B + GC_1 + IC_1 \sim AI$

$B + GC_1 + IC_1 \sim SI$

$B + GC_1 + IC_1 \sim$ each scale of involvement separately

Table 1 displays the results of the regression analyses using as criterion variables overall academic involvement, overall social involvement and 14 subscales of involvement in a total of 16 separate regression analyses. In each regression the entire set of background variables was entered first into the equation as a block. Continuous variables included SAT verbal, SAT math, high school rank and parental education. All other variables were treated as categorical data and dummy coded. See Appendix 6 for the detail on the coding of background variables. Next, goal commitment or institutional commitment was entered in a stepwise fashion based upon their partial correlations with the criterion variable. Table 1 includes partial correlations of GC_1 and IC_1 with the criterion variable after entry of background variables, variance explained after background variables have entered (R^2), R^2 change after entry of commitment and the overall

Table 1

Regression Summary for
Prediction of Student Involvement

	After Entry of All Background Variables				After Stepwise Entry of Pre-College Goal & Institutional Commitment				
			Partial Correlations						
Criterion Var	R^2	F (sig.)	Goal Commit	Inst Commit	Var to Enter	R^2 Chang	F Change (sig.)	Overall R^2	Overall F (sig.)
Acad Involv	.0504	1.946 (.033)	.256 (.000)	-.012 (.808)	Goal	.0669	30.48 (.000)	.1174	4.45 (.000)
Library	.0791	3.147 (.000)	.093 (.063)	.057 (.250)	None	---	----	---	----
Faculty	.0421	1.609 (.094)	.215 (.000)	.000 (.996)	Goal	.0441	19.41 (.000)	.0862	3.16 (.000)
Course Learn	.0566	2.199 (.014)	.286 (.000)	-.010 (.845)	Goal	.0771	35.79 (.000)	.1337	5.17 (.000)
Writing	.0413	1.579 (.102)	.195 (.000)	-.026 (.601)	Goal	.0364	15.88 (.000)	.0778	2.82 (.001)
Sci/ Tech	.1750	7.769 (.000)	.113 (.024)	-.040 (.428)	Goal	.0104	5.153 (.024)	.1854	7.62 (.000)
Soical Involv	.0459	1.746 (.062)	.169 (.001)	-.009 (.862)	Goal	.0273	11.84 (.001)	.0728	2.63 (.002)
Art, Mu,Th	.0699	2.753 (.002)	.079 (.115)	-.044 (.379)	None	---	----	---	----
Studnt Union	.0580	2.257 (.011)	.053 (.289)	-.097 (.053)	None	---	----	---	----
Ath & Rec	.1546	6.699 (.000)	.008 (.871)	-.049 (.321)	None	---	----	---	----
Clubs & Org	.0760	3.012 (.001)	.142 (.004)	.039 (.435)	Goal	.0186	8.276 (.004)	.0946	3.50 (.000)
Persnl Exper	.0937	3.788 (.000)	.132 (.008)	.073 (.142)	Goal	.0158	7.113 (.008)	.1095	4.12 (.000)
Studnt Acqunt	.0272	1.023 (.425)	.157 (.002)	-.007 (.883)	Goal	.0240	10.16 (.002)	.0511	1.82 (.045)
Dormitory	.0486	1.871 (.042)	.099 (.047)	.053 (.291)	Goal	.0093	3.966 (.047)	.0579	2.06 (.019)
Topics Conver	.0300	1.134 (.333)	.152 (.002)	.026 (.599)	Goal	.0225	9.569 (.002)	.0526	1.86 (.038)
Info Conver	.0504	1.946 (.033)	.155 (.002)	-.037 (.460)	Goal	.0229	9.926 (.002)	.0733	2.65 (.002)

variance explained as well as relevant F ratios and levels of significance.

Table 1 reveals that each of the sixteen final regression equations resulted in a significant overall R^2 value. The independent variables were able to explain about twelve percent of the variance in academic involvement and slightly over seven percent of the variance in social involvement. For the fourteen individual involvement areas, the proportions of variance accounted for by the regressions ranged from just over five percent to more than eighteen percent.

Background variables alone were able to account for significant proportions of variance in eleven of the sixteen criterion variables. In four instances, the background variables were the only predictors to enter the final regression equations. These four equations predicted student involvement in the areas of library experiences, the fine arts, student union activities, and use of athletic and recreation facilities.

The figures in Table 1 indicate that pre-college institutional commitment was not useful in predicting student involvement during the freshman year of college. Once student background characteristics had been entered, in none of the sixteen instances did institutional commitment have a significant partial correlation with the criterion variable. Accordingly, the pre-college measure of institutional commitment failed to enter any of the final regression equations.

In the prediction of overall academic involvement, pre-college goal commitment explained about seven percent of the

variance, over and above that explained by the background variables alone. In the case of overall social involvement, the proportion of variance accounted for by pre-college goal commitment was smaller, but again represented a statistically significant increase over that attributable to background variables.

When separate regression analyses were performed using each of the five academic involvement scales as criterion variables, goal commitment entered four of the final equations. After accounting for individual background differences, pre-college goal commitment added significantly to the prediction of student involvement in experiences with faculty, course learning activities, writing experiences, and scientific activities. The additional variance explained by pre-college goal commitment ranged from one percent to nearly eight percent. The smallest increase was in the area of science and technology, where background variables alone had accounted for 17.5 percent of the variation in student involvement. The only prediction to which pre-college goal commitment failed to add significantly was the area of involvement in library activities.

The nine scales representing specific areas of social involvement also were designated as criterion variables in separate regression analyses. In six instances, pre-college goal commitment added significantly to prediction of the criterion. After background variables had been entered into the regressions equations, goal commitment increased the proportion of explained variance for the following scales: Clubs and

Organizations; Personal Experiences; Student Acquaintances; Dormitory Experiences; Topics of Conversation; and Information in Conversations. The additional amount of variance explained uniquely by pre-college goal commitment ranged from one percent to 2.4 percent.

Pre-college goal commitment did not add substantially to the prediction of three areas of social involvement. These areas included participation in fine arts experiences, involvement in the student union, and use of athletic or recreation facilities. The social involvement areas in which pre-college goal commitment made a significant unique contribution represent rather general types of activity and personal interaction. The areas in which goal commitment did not increase the prediction were activities of a more specialized nature or those which involved the use of campus facilities.

In general, pre-college goal commitment was a better predictor of academic involvement than of social involvement. This was true for the composite indices of involvement as well as for the individual involvement scales. This pattern is consistent with the structure of the Tinto model. The finding that pre-college institutional commitment was not at all useful in predicting freshman year social involvement runs contrary to expectations hypothesized from the Tinto model. Among the students in this sample, pre-college goal commitment was better than institutional commitment in predicting social involvement.

The second research question concerned the feasibility of predicting students' goal commitment and institutional commitment

at the end of the freshman year. Tinto states:

> Given prior levels of goal and institutional commitment, it is the person's normative and structural integration into the academic and social systems that lead to new levels of commitment. Other things being equal, the higher the degree of integration of the individual into the college systems, the greater will be his commitment to the specific institution and to the goal of college completion (Tinto, p. 96).

In this study, an attempt was made to test Tinto's hypothesis. A series of regression analyses were conducted, using the spring measures of goal commitment and institutional commitment as criterion variables. The purpose of these analyses was to determine the relative usefulness of pre-college commitment and various measures of involvement in predicting students' commitment levels late in the freshman year. By first controlling for individual background characteristics, then entering the pre-college commitment scales into the equations, and finally including the involvement indices, it was possible to assess the added contribution of each variable set.

In symbolic form:

$$B + CC_1 + IC_1 + AI + SI \sim GC_2$$

$$B + GC_1 + IC_1 + AI + SI \sim IC_2$$

Tables 2 and 3 present the regression summary for predicting end-of-year commitment. Table 2 looks closely at the entry of background and commitment variables while Table 3 adds the involvement variables. It is clear from Table 2 that background variables alone accounted for a significant portion of the variance in final goal commitment (about 7 percent). After the background variables entered the equation, pre-college goal commitment had a strong positive partial correlation with the

Table 2

Regression Summary for Prediction of End-of-Year Commitment

		Criterion Variable	
		End-of-Year Goal Commitment	End-of-Year Institutional Commitment
After Entry of all Background Variables	R^2	.07313	.05566
	F/(sig.)	2.762 (.0018)	22.063 (.0221)
	Partial Correlation with Criterion/ (signif.)	Goal Commit: .4768 (.0000) Inst. Commit. .0407 (.4248)	Goal Commit: .1069 (.0358) Inst. Commit: .2999 (.0000)
After Direct Entry of Pre-College Goal & Institutional Commitment	R^2 Change	.21073	.09059
	F of Change/ (signif.)	56.352 (.0000)	20.321 (.0000)
	Overall R^2	.28387	.14626
	Overall F/ (signif.)	11.678 (.0000)	5.047 (.0000)
After Stepwise Entry of Pre-College Goal & Institutional Commitment	Variable Entered	Pre-College Goal Commitment	Pre-College Institutional Commitment
	R^2 Change	.21069	.08495
	F of Change/ (signif.)	112.97 (.0000)	37.957 (.0000)
	Overall R^2	.28382	.14061
	Overall F/ (signif.)	12.682 (.0000)	5.236 (.0000)

spring goal commitment measure. At the same time, however, the partial correlation between pre-college institutional commitment and the criterion was too small to be statistically significant.

When both pre-college commitment variables were entered simultaneously into the equation, they together accounted for a substantial increase in the overall R^2 (about 21 percent). Yet when pre-college goal and institutional commitment were allowed to enter the regression separately via the stepwise procedure, it was apparent that goal commitment alone accounted for nearly all the increase. In fact, once initial goal commitment had entered the equation, pre-college institutional commitment showed a very slight negative correlation with the criterion.

Also shown in Table 2 are results of the first steps of regression analysis with the spring institutional commitment score as criterion variable. Again, the set of background variables together accounted for a significant amount of the variation in the criterion (about 6 percent). After entering these background variables, the partial correlations between the criterion and each of the pre-college commitment measures were examined. In this instance, both pre-college goal commitment and pre-college institutional commitment had significant partial correlations with the criterion. However, upon inspecting the size of the partial correlations and testing the significance of the Beta weights of each variable if it were next to enter the equation, it appears that pre-college institutional commitment was the better predictor of end-of-year institutional commitment.

If both pre-college commitment variables were entered

directly as a set into the equation, they added significantly to the prediction of the spring measure of institutional commitment. When the two independent variables were entered via the stepwise method, only the pre-college institutional commitment scale entered the equation. In fact, institutional commitment alone increased the R^2 value nearly as much as did both variables together. Thus, it appears that, while pre-college goal commitment was somewhat related to spring institutional commitment, most of the variance it explained was shared with pre-college institutional commitment. Pre-college goal commitment and pre-college institutional commitment were themselves only slightly correlated (.07, $p = .08$).

To summarize, it appears that pre-college goal commitment was a strong predictor of end-of-year goal commitment, after student's individual background differences were controlled. Pre-college institutional commitment, however, was not a useful predictor of goal commitment late in the freshman year. Both pre-college measures of commitment were effective predictors of spring institutional commitment scores. However, pre-college institutional commitment was the stronger predictor of students' levels of commitment to the institution at the end of the academic year. Note also that twice as much variance was explained in final goal commitment (28 percent) using all pre-college measures than was explained in final institutional commitment (14 percent) using all pre-college measures. What these data show so far is that initial goal commitment is highly associated with final goal commitment and initial institutional

commitment is moderately associated with final institutional commitment. It also shows that background factors alone are associated with final commitment levels, but not as strongly as pre-college commitment levels. Finally background factors do not share much variance with pre-college commitment measures. These pre-measures appear to be separate constructs from the other pre-college measures of ability, rank, etc.

Does the addition of involvement measures enhance the prediction of final commitment? Table 3 addresses this part of the research question. After controlling for pre-enrollment differences, partial correlations between the criterion and both academic and social involvement variables were examined. Table 3 shows these partial correlations and reveals that either involvement measure would contribute significantly to the accuracy of prediction if entered next into the equation. However, academic involvement had the stronger partial correlation with end-of-year goal commitment and would yield a greater increase in the overall prediction if entered on the succeeding step.

When both academic and social involvement indices were entered simultaneously into the predictive equation, the two variables together accounted for a significant increase in the proportion of variance explained (about 2 percent). When entered via stepwise regression, only academic involvement was included in the final equation. Because of the strong correlation between academic and social involvement ($r = .59$), the social involvement variable was unable to make a significant unique contribution

Table 3

Regression Summary for Prediction of End-of-Year Commitment with Overall Academic and Social Involvement Measures

		Criterion Variable	
		End-of-Year Goal Commitment	End-of-Year Institutional Commitment
After Entry of all Background Variables and Pre-College Commitment Measures	R^2	.28387	.14626
	F/(sig.)	11.678 (.0000)	5.047 (.0000)
	Partial Correlation with Criterion/ (signif.)	Academic Involv: .1718 (.0007) Social Involv: .1272 (.0126)	Academic Involv: .0713 (.1634) Social Involv: .1136 (.0260)
After Direct Entry of Academic & Social Involvement Measures	R^2 Change	.02187	.01104
	F of Change/ (signif.)	6.001 (.0027)	2.495 (.0839)
	Overall R^2	.30573	.15729
	Overall F/ (signif.)	11.185 (.0000)	4.741 (.0000)
After Stepwise Entry of Academic & Social Involvement Measures	Variable Entered	Academic Involvement	Social Involvement
	R^2 Change	.02114	.01101
	F of Change/ (signif.)	11.620 (.0007)	4.992 (.0260)
	Overall R^2	.30501	.15727
	Overall F/ (signif.)	11.975 (.0000)	5.092 (.0000)

once its shared variance with academic involvement had been accounted for. In a separate procedure, social involvement was forced to enter before academic involvement. Both were then significant, accounting for about one percent of the variance respectively.

End-of-year institutional commitment represented the criterion variable in the next regression analyses. Results presented in Table 3 show that a significant proportion of the variance in this criterion could be predicted from the student background variables and pre-college commitment scores (about 14 percent). Once these pre-enrollment differences had been entered into the regressions, partial correlations of the remaining predictor variables were examined. Results indicated that social involvement had a substantial partial correlation with end-of-year institutional commitment after the effects of all initial student differences had been controlled. However, the partial correlation between academic involvement and spring institutional commitment was too small to be statistically significant.

When both academic and social involvement variables were entered together in the next regression step, they failed to signifcantly increase the proportion of explained variance. However, when entered via the stepwise method, the social involvement variable alone entered the equation and did result in a significant increase in the R^2 value (about one percent).

The results of these analyses using overall academic and social involvement as predictors tended to conform to the structure of the Tinto model. Over and above the pre-enrollment

variables, freshman year experiences within the academic and social systems of the college contributed to the prediction of end-of-year commitment levels. Further, academic involvement was found to be the better predictor of goal commitment, while social involvement was more useful in predicting commitment to the institution. However, compared to the magnitude of the variance explained by pre-enrollment variables, the effect of academic and social involvement appeared to be quite modest indeed. Part of the reason for this modesty stems from the conservative procedure inherent in the stepwise multiple regression procedure in which any shared variance of a pair of independent variables with the criterion variable is all attributed to the first variable entered. For example, in this case both GC_1 and AI were significantly correlated with GC_2 (.49 and .27 respectively). They were also correlated with each other (r = .26). Once GC_1 was entered into the regression procedure, AI correlation with GC_2 had declined to r = .17 (shown on Table 3). In a separate procedure, when both AI and SI were forced in ahead of the commitment variables but after the background variables they accounted for over 7 percent of the variance of GC_2, about three times as much as in the more conservative procedure. The same logic would hold for the background variables to the extent that they share variation with involvement and the criterion variables. A non-technical interpretation of this analysis would go something like this:

> Students' pre-enrollment desire to finish college and earn a degree is highly related to this same desire after the freshman year. It is also related to the propensity to get involved in some of the campus academic and social

activities. Once involvement actually takes place the commitment to finish college is heightened. Therefore, the role of involvement is not only to heighten commitment, but it provides the "conduit" or nexus through which one can anticipate campus life. This anticipation of getting involved is the portion of variance shared with involvement that affects final goal commitment. Obviously, without opportunities for involvement, the initial commitment to complete a degree would probably be much less. Viewed in this way, the importance of involvement looms greater than simply the additional predictive power it provides. The implications for campus programming are also somewhat more important.

The final line of analysis consisted of examining the association of the individual 14 scales with the criterion variables. After all pre-enrollment variables were entered, Table 4 shows that an additional 5 percent of the variance in GC_2 was explained and an additional 6 percent of the variance was explained in IC_2 by using the separate involvement scales entered as a block. Overall R^2 reached .34 and .21 for GC_2 and IC_2, respectively. Because of the substantial intercorrelations of the 14 involvement scales a stepwise regression was somewhat hard to interpret and is not shown here. Instead, Table 5 shows the partial correlations of each scale with the criterion variables. Seven of the scales are significantly ($p < .05$) correlated with GC_2 and 5 scales are correlated with IC_2. Participating in clubs and organizations, student union activities, dormitory activities and experiences in writing were associated with both goal and institutional commitment after pre-enrollment variables had been controlled. In addition, learning activities associated with courses, informal conversations with students and using knowledge and information acquired in college during these conversations were associated with year-end goal commitment. Making friends

Table 4

Regression Summary for Prediction of End-of-Year Commitment with Blockwise Entry of CSEQ Quality of Effort Scales

		Criterion Variable	
		End-of-Year Goal Commitment	End-of-Year Institutional Commitment
After Entry of All Pre-Enrollment Variables	R^2	.28387	.14626
	F/(sig.)	11.678 (.0000)	5.047 (.0000)
After Adding Academic Involvement Set Only	R^2 Change	.02529	.02620
	F of Change/ (signif.)	2.767 (.0180)	2.393 (.0372)
	Overall R^2	.30915	.17246
	Overall F/ (signif.)	9.397 (.0000)	4.376 (.0000)
After Adding Social Involvement Set Only	R^2 Change	.03926	.04415
	F of Change/ (signif.)	2.411 (.0114)	2.266 (.0176)
	Overall R^2	.32313	.19041
	Overall F/ (signif.)	8.116 (.0000)	3.998 (.0000)
After Adding Academic & Social Involvement Sets Concurrently	R^2 Change	.05154	.06267
	F of Change/ (signif.)	2.044 (.0142)	2.088 (.0119)
	Overall R^2	.33541	.20893
	Overall F/ (signif.)	6.897 (.0000)	3.609 (.0000)

Table 5

Partial Correlations of Involvement Measures with End-of-Year Commitment after Entry of all Pre-Enrollment Variables

	Criterion Variable			
	End-of-Year Goal Commitment		End-of-Year Institutional Commitment	
	Partial	(sig.)	Partial	(sig.)
Library Experiences	.09057	(.0763)	.07923	(.1212)
Experiences w/ Faculty	.06137	(.2302)	.03167	(.5360)
Course Learning	.14277	(.0051)*	.09004	(.0780)
Experience in Writing	.17119	(.0008)*	.11813	(.0206)*
Science/Technology	.09751	(.0562)	-.06230	(.2232)
Art, Music, Theater	-.01737	(.7344)	-.02395	(.6398)
Student Union	.16056	(.0016)*	.11168	(.0287)*
Athletic & Recreation Facilities	.02657	(.6037)	.00334	(.9480)
Clubs & Organizations	.14026	(.0059)*	.18991	(.0002)*
Personal Experiences	-.02756	(.5903)	.00311	(.9516)
Student Acquaintances	.09995	(.0503)	.10243	(.0449)*
Dormitory	.10779	(.0347)*	.11659	(.0223)*
Topics of Conversation	.10756	(.0351)*	.05084	(.3204)
Information in Conversations	.11419	(.0252)*	.05767	(.2596)

and getting to know them better (student acquaintances) was predictive of year-end institutional commitment. A number of involvement scales were unrelated to either measures of final commitment after controlling for pre-enrollment measures. These included interaction with faculty, use of the library, involvment in art, music, theater, athletic and recreational facilities as well as involvment in science and technology.

CONCLUSIONS

Can involvement in college be predicted from levels of initial goal commitment and institutional commitment? The answer is "yes, it can." But the particulars are important.

(1) First, background factors themselves account for anywhere from 3 percent of the variation to 18 percent of the variation of the different measures of student involvement. What students bring with them to college predisposes them to get involved.

(2) Initial goal commitment is a significant predictor of most of the measures of student involvement--both academic and social involvement--explaining anywhere from an additional 1 percent of variance to 8 percent of variance when background factors are controlled. The more committed students are to the idea of completing and getting a degree, the more likely they are to get involved in campus activities.

(3) Initial institutional commitment was not associated with any of the measures of academic or social involvement after background variables were controlled. Contrary to the Tinto model, initial intentions to finish college at Mary Washington

did not predict social involvement.

This latter conclusion was unexpected and may be due to different measures of pre-enrollment institutional commitment. Earlier studies did not always distinguish between goal and institutional commitment, nor were they usually as comprehensive as the measure developed for this study. At the same time, Mary Washington College may be unique. It seems logical that students would take greater advantage of opportunities for involvement if they freely chose the college, viewed it as very desirable, expected to remain and felt comfortable with their decision (all elements of pre-enrollment institutional commitment). However, it may be that these elements are only operable when colleges project a strong, clear-cut image so that students' identification with the college is related to anticipated campus experiences. The image at Mary Washington may be weaker and more diffuse than most colleges, attracting students whose pre-college institutional commitment provides few clues about the kind of effort they will invest in involvement opportunities.

Some interesting implications arise if the preceding explanation should prove valid. Institutions invest a great deal of resources in attempting to attract students who will become active, involved members of the college community. Most colleges and universities hope to enroll students who are eager to attend their particular institution, and most dislike being considered a "back-up" option to other institutions. However, results of the present study indicate that students who initially are less committed to the institution are no less likely to become highly

involved in the academic or social life of the college. At the same time, strong initial institutional commitment is no guarantee of high-level involvement during the freshman year. Perhaps admissions officers and enrollment managers will have to concentrate on projecting clear images of their colleges grounded in campus opportunities for involvement so that "institutional commitment" will be a more meaningful and educationally functional construct.

Can end-of-year goal and institutional commitment be predicted from prior levels of commitment and from freshman year involvement measures? Again, yes, they can. And again, the particulars are important and will be summarized here.

(1) Approximately 30 percent of the variance in final goal commitment (GC_2) was accounted for using background factors (7 percent), initial goal commitment (GC_1, 21 percent), and social and academic involvement (AI, 2 percent to 5 percent). Initial institutional commitment (IC_1) was not a significant predictor. Social involvement (SI) had a significant partial correlation with the criterion; but the stronger predictor, academic involvement, tended to mask the contribution of social involvement.

(2) When the individual involvement scales were used as predictors (rather than the composite scales), 33 percent of the variance in final goal commitment (GC_2) was accounted for, including 5 percent added after pre-enrollment variables were controlled. Both academic and social involvement seemed to play significant roles.

(3) Approximately 15 percent of the variance in final institutional commitment (IC_2), was accounted for using background factors (B, 5 percent), initial institutional commitment (IC_1, 9 percent), and social involvement (SI, 1 percent). Neither initial goal commitment (GC_1) nor academic involvement (AI) were significant predictors when composite scales were used for involvement.

(4) When individual involvement scales were used as predictors (rather than composite scales), 20 percent of the variance in final institutional commitment (IC_2) was explained, including 6 percent added after pre-enrollment variables were controlled. Both academic and social involvement appeared to play significant roles.

(5) Examination of the 14 individual involvement scales and their relationship to end-of-year commitment revealed that significant partial correlations existed after control of all pre-enrollment variables for 8 of 14 scales. Two were academic involvement and 6 were social involvement.

What do these findings mean? First, in general, they tend to support the Tinto model as adapted for this study in that initial goal commitment and academic involvement are the best predictors of final goal commitment, while initial institutional commitment and social involvement are the best predictors of final institutional commitment. In the first part of the study we observed that initial institutional commitment was not related to involvement. However, it is still important as a predictor of later institutional commitment which is of concern to those who

worry about the persistence of students at the college. It is also encouraging to see that student involvement is to some extent at least associated with higher levels of final institutional commitment.

In comparison to pre-enrollment variables the measures of student involvement yield quite modest predictive power, regardless of the particular method of regression analysis used. This is discouraging because pre-enrollment variables are probably more difficult to change than involvement opportunities and experiences right on the campus. However, as pointed out earlier, these are conservative estimates of the relative strength of involvement variables to predict college commitment. The variance that the involvement variables share with pre-enrollment variables needs further analysis, but seems to suggest that involvement opportunities and activities might in some way "shape" initial levels of college commitment (and even background variables) by projecting a clearer image to prospective students about the kinds of involvements that they might anticipate prior to enrollment. The process of self-selection then becomes the mechanism through which these pre-enrollment variables might be "shaped."

Still, involvement variables <u>are</u> significantly associated with the end-of-year commitment to college going and to continuing at Mary Washington College. What advice can be given to enrollment managers and student affairs officials who want to increase student commitment through greater involvement?

Student involvement in writing experiences and in clubs and

organizations should be viewed as particulary important. These activities scales had very strong partial correlations with both end-of-year commitment measures. At the particular institution in this study, the development of strong writing abilities is a clearly articulated value. As such an integral part of the college curriculum, perhaps writing activities foster stronger commitment to completing college and also encourage students' identification with and loyalty to the institution. Similarly, involvement in clubs and organizations appears to impact upon both types of commitment. Many college clubs are academic in nature, which may help to explain the connection to goal commitment. In addition, virtually all campus organizations provide means for students to form attachments to other students and faculty, and to assume roles of individual responsibility and leadership. Such activities seem quite naturally connected to increased commitment to college in general and to the institution in particular.

Two other forms of involvement appeared to have potential importance in predicting both goal and institutional commitment levels. These were represented by the scales which measured participation in student union activities and dormitory experiences. Once again, these scales encompass activities which are co-curricular in nature, but impact the total college experience of the student. Apparently, greater than average involvement in these areas fosters connections that are associated with high levels of goal commitment and institutional commitment.

Three additional scales had significant partial correlations with end-of-year goal commitment, but not with institutional commitment. Of these, the Course Learning scale had the highest partial correlation. A strong relationship between activities directly related to academic course work and goal commitment is consistent with the Tinto model. The two remaining scales with significant partial correlations were Topic of Conversation and Information in Conversations. Items in these scales refer to the breadth and intellectual depth of student conversations. Viewed in this context, as indicators of intellectual activity, these measures seem legitimately connected to students' commitment to complete college.

One involvement scale had a significant partial correlation only with the end-of-year institutional commitment variable. This scale, Student Acquaintances, measures the degree of diversity among the individual's friends and acquaintances. Apparently, the more diverse the student's interpersonal contacts, the greater was his or her commitment to the institution. If such a link could be firmly established in additional research, it would provide a strong argument for cultural, ethnic, philosophical, socioeconomic, ard age diversity in colleges and universities.

Conspicuously absent from the list of variables with strong partial correlations with either type of end-of-year commitment was the Experiences with Faculty scale. This is surprising, considering the important role of student-faculty interaction found in other research (Astin, 1977; Endo and Harpel, 1982;

Pascarellaand Terenzini, 1980; Terenzini and Pascarella, 1977). Unfortunately, no clear explanation for this finding is apparent. Examination of the zero-order correlations reveals that faculty experiences were significantly related to both pre-college and end-of-year goal commitment, but were not related to either institutional commitment measure. Tinto had placed student-faculty interaction in the social integration component of his model, suggesting that these experiences should be linked strongly to institutional commitment. In the present study, however, student-faculty involvement appeared almost completely unrelated to end-of-year goal or institutional commitment, once students' pre-enrollment differences were taken into account.

Because of the substantial intercorrelation of the various involvement scales, it appears that "involvement" is a more generalized phenomenon. Overall academic involvement was correlated with overall social involvement at r = .59 despite the success of the factor analysis to find two somewhat distinct clusters. If this is the case, then the best practical advice might be to "hook" students into <u>some</u> activity where they can get involved. Which activity may not be as important, although some caveat might be in order. A few of the involvement scales showed no association with end-of-year commitments. They tended to the more specific activities like art, music, theater, athletics and science. They also tended to be activities which had large parts of their variation explained by background variables. Apparently, particular types of students knew prior to enrollment whether they were interested in these activities. Their actual

participation (or lack thereof) added little to the prediction of end-of-year commitment. The involvements that may be regarded as more general (interaction with students, writing, conversing, studying, etc.) seem to hold the most promise for building commitment to college during the course of the freshman year according to the data in this study.

APPENDIX 1

Student Background Characteristics

Variable	Category	Entire Class (N=624)		Study Group (N=435)		Chi-sq (signif.)
Residence	VA Resident	482	77.2%	332	76.3%	.191
	Non-VA	142	22.8%	103	23.7%	(.662)
Gender	Male	116	18.6%	80	18.4%	.013
	Female	508	81.4%	355	81.6%	(.911)
Early Decision	No	583	93.4%	400	92.0%	1.475
	Yes	41	6.6%	35	8.0%	(.224)
Father's Educational Level	HS or less	107	17.1%	81	18.6%	
	Some College	102	16.3%	76	17.5%	
	Bachelor's	195	31.3%	139	32.0%	
	Master's	109	17.5%	72	16.6%	2.945
	MD or JD	35	5.6%	19	4.4%	(.816)
	Doctorate	19	3.0%	13	3.0%	
	N/A	57	9.1%	35	8.0%	
Mother's Educational Level	HS or less	145	23.2%	106	24.4%	
	Some College	193	30.9%	131	30.1%	
	Bachelor's	171	27.4%	119	27.4%	
	Master's	43	6.9%	32	7.4%	.777
	MD or JD	4	.6%	3	.7%	(.993)
	Doctorate	3	.5%	2	.5%	
	N/A	65	10.4%	42	9.7%	
Distance from Home to College	0-75 miles	354	56.7%	241	55.4%	
	76-150 miles	95	15.2%	72	16.6%	.651
	151+ miles	175	28.0%	122	28.0%	(.722)
Intended Major Program	Social Sci, Human & Arts	257	41.2%	174	40.0%	
	Nat Sci/Math	134	21.5%	98	22.5%	.539
	Business	138	22.1%	94	21.6%	(.910)
	Undecided	95	15.2%	69	15.9%	
High School Rank in Class	1st Decile	138	22.1%	102	23.4%	
	2nd Decile	143	22.9%	102	23.4%	
	3rd Decile	128	20.5%	89	20.5%	
	4th Decile	66	10.6%	42	9.7%	
	5th Decile	50	8.0%	33	7.6%	1.317
	6th Decile	30	4.8%	19	4.4%	(.998)
	7th Decile	15	2.4%	9	2.1%	
	8th Decile	3	.5%	2	.5%	
	9th Decile	1	.2%	1	.2%	
	10th Decile	0		0		
	N/A	50	8.0%	36	8.3%	

Student Background Characteristics

Variable	Category	Entire Class (N=624)		Study Group (N=435)		Chi-sq (signif.)
Persistence	Persisting	494	79.2%	353	81.1%	
	Suspended	49	7.9%	31	7.1%	1.084
	Vol Withdrew	81	13.0%	51	11.7%	(.582)

Continuous Variables

Variable	Entire Class (N=624)	Study Group (N=435)
SAT Math Score	Mean= 51.151 St Dev=6.869	Mean= 51.402 St Dev=6.869
SAT Verbal Score	Mean= 49.312 St Dev=7.505	Mean= 49.264 St Dev=7.558

APPENDIX 2

(Pre-enrollment Goal Commitment)

MWC SURVEY OF STUDENT ATTITUDES

Directions: For each of the following questions, place a check mark in the space beside the answer that matches your current belief.

1. What is your best guess as to the chances that you will complete a bachelor's degree program?
( ) a. I am very sure that I will.
( ) b. I am fairly sure that I will.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I will not.
( ) e. I am very sure that I will not.

2. What is your best guess as to the chances that you will complete a bachelor's degree program within 4 years, with no interruptions.
( ) a. I am very sure that I will.
( ) b. I am fairly sure that I will.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I will not.
( ) e. I am very sure that I will not.

3. What is your best guess as to the chances that you will go beyond a bachelor's degree to study for a more advanced degree?
( ) a. I am very sure that I will.
( ) b. I am fairly sure that I will.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I will not.
( ) e. I am very sure that I will not.

4. What is the highest academic degree that you plan to obtain?
( ) a. Doctorate (Ph.D.)
( ) b. Law or Medical Degree (J.D. or M.D.)
( ) c. Master's Degree
( ) d. Bachelor's Degree
( ) e. Less than a Bachelor's Degree

5. How necessary do you feel a college degree will be for success in your future career?
( ) a. A college degree will be absolutely necessary.
( ) b. A college degree will be fairly important.
( ) c. I am completely unsure.
( ) d. A college degree will not be necessary for my career success.

6. How important do you feel a college degree will be for your own personal satisfaction in the future?
( ) a. A college degree will be extremely important
( ) b. A college degree will be fairly important.
( ) c. I am completely unsure.
( ) d. A college degree will not be necessary for my future personal satisfaction.

APPENDIX 2

(Pre-enrollment Institutional Commitment)

Directions: For each of the following questions, place a check mark in the space beside the the most accurate answer for you.

7. To how many **other** colleges or universities did you apply for admission? [Do not count MWC.]
( ) a. None.
( ) b. One.
( ) c. Two.
( ) d. Three.
( ) e. Four, or more.

8. Besides MWC, to how many other colleges or universities were you offered admission?
( ) a. None.
( ) b. One.
( ) c. Two.
( ) d. Three.
( ) e. Four, or more.

9. Among the colleges or universities to which you applied, which choice was MWC for you?
( ) a. MWC was my first choice.
( ) b. MWC was my second choice.
( ) c. MWC was my third choice.
( ) d. MWC was my fourth choice, or lower.

10. If MWC was **not** your first choice college, which one of these statements describes best your reason for deciding to enroll at Mary Washington? [If MWC was your first choice, skip this question.]
( ) a. Denied admission to first choice college.
( ) b. Financial considerations.
( ) c. Geographic location of MWC.
( ) d. Other reasons (please specify)._____

_____

11. What is your best guess as to the chances that you will attempt to transfer from MWC to another college or university before you graduate?
( ) a. I am very sure that I **will**.
( ) b. I am fairly sure that I **will**.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I **will not**.
( ) e. I am very sure that I **will not**.

12. How certain are you that you made the right decision in choosing to attend MWC?
( ) a. I am very sure this **was** the right decision.
( ) b. I am fairly sure this **was** the right decision.
( ) c. I am completely unsure.
( ) d. I am fairly sure this **was not** the right decision.
( ) e. I am very sure this **was not** the right decision.

code_____

7. How certain are you that you made the right decision in choosing to attend MWC?
( ) a. I am very sure this was the right decision.
( ) b. I am fairly sure this was the right decision.
( ) c. I am completely unsure.
( ) d. I am fairly sure this was not the right decision.
( ) e. I am very sure this was not the right decision.

8. How likely is it that you will re-enroll at MWC next fall?
( ) a. I am very sure that I will.
( ) b. I am fairly sure that I will.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I will not.
( ) e. I am very sure that I will not.

9. What is your best guess as to the chances that you will attempt to transfer from MWC to another college or university before you graduate?
( ) a. I am very sure that I will.
( ) b. I am fairly sure that I will.
( ) c. I am completely unsure.
( ) d. I am fairly sure that I will not.
( ) e. I am very sure that I will not.

10. If you plan to transfer from MWC to another college or university, which one of the following is the most important reason for your decision? (Answer only if you plan to transfer.)
( ) a. Dissatisfied with academic program at MWC.
( ) b. Dissatisfied with social life at MWC.
( ) c. MWC does not offer the academic program I desire.
( ) d. Other (please specify)_____

11. How important is it for you to graduate from MWC, as opposed to some other college or university?
( ) a. Very important to graduate from MWC.
( ) b. Fairly important to graduate from MWC.
( ) c. Neutral
( ) d. Probably would rather graduate from another college.
( ) e. Definitely would rather graduate from another college.

12. How do you feel about the following statement: "I am very proud to tell people that I attend Mary Washington College" ?
( ) a. Strongly agree
( ) b. Agree
( ) c. Neutral
( ) d. Disagree
( ) e. Strongly disagree

13. Would you recommend MWC to other prospective students similar to yourself?
( ) a. Definitely yes
( ) b. Probably yes
( ) c. Neutral
( ) d. Probably no
( ) e. Definitely no

code_____

APPENDIX 3

Factor Loadings of Items on Pre-College Commitment Survey

	N=639		N=415	
	Factor 1 (Institutional Commitment)	Factor 2 (Goal Commitment)	Factor 1 (Institutional Commitment)	Factor 2 (Goal Commitment)
Item 1	-.01069	.68197*	-.00888	.63840*
Item 2	.03764	.64115*	.07238	.59504*
Item 3	-.07534	.50945*	-.02334	.53182*
Item 4	-.08231	.38529*	-.03531	.42029*
Item 5	.05165	.38179*	.08785	.35258*
Item 6	05380	.37195*	.08710	.30779*
Choice (7 + 8)	.52655*	-.05196	.53277*	.01333
Item 9	.87266*	-.00571	.88814*	-.06612
Item 10	.91580*	-.06488	.90320*	-.08541
Item 11	.25658*	.17035	.29837*	.13982
Item 12	.19443	.32519	.26548*	.21875

APPENDIX 3

Factor Loadings of Items on End-of-Year Commitment Survey

	Factor 1 (Institutional Commitment)	Factor 2 (Goal Commitment)
Item 1	.16123	.53877*
Item 2	.22553	.47196*
Item 3	-.08139	.70602*
Item 4	-.15025	.56638*
Item 5	.12206	.55244*
Item 6	.18163	.46259*
Item 7	.83879*	.15821
Item 8	.61178*	.21123
Item 9	.73071*	.11493
Item 10	.60168*	-.02697
Item 11	.74712*	.14430
Item 12	.68670*	.03640
Item 13	.80213*	.05746

APPENDIX 4

College Student Experiences Questionnaire Scales

Topics of the Quality of Effort Scales, and underlying quality dimensions:

1. Library

   From: routine, and moderately exploratory use-- such as using the card catalogue
   To: increased amount of independent exploration and focused activity-- as in browsing in the stacks, developing a bibliography

2. Classroom (course learning scale)

   From: relatively simple cognitive activities--such as taking notes, underlining, etc.
   To: higher level cognitive activities--such as efforts to explain, organize, and go beyond assignments

3. Facilities related to the Arts (Art, Music, Theater scale)

   From: talking about and attending
   To: efforts toward greater understanding (the views of experts, critics) and involvement through participation

4. Facilities related to Science/Technology (principles, procedures, and computers

   From: memorizing, watching, reading
   To: efforts to explain, experiment, and develop skills

5. Student Union

   From: casual and informal use--had snacks, met friends, etc.
   To: programmatic use--attended events, held meetings, etc.

6. Athletic and Recreation Facilities

   From: generally informal use--exercise, games
   To: greater efforts toward improvement and skilled performance

7. Dormitory or Fraternity/Sorority

   From: general socializing
   To: more personal exchanges--helping, sharing, studying together, working on projects

(Continued)

8. Experiences with Faculty

From: routine and casual
To: more serious contacts--such as discussing careers, inviting criticisms, seeking counsel

9. Clubs and Organizations

From: awareness of events and organizations
To: attending events, discussing programs, working in organizations

10. Experiences in Writing

From: general concern with words, grammar, revisions
To: seeking criticism from others, greater concern with clarity and style

11. Personal Experiences

From: general curiosity about understanding one's own behavior, and others--talked with friends, etc.
To: more focused and expertly informed sources of self-understanding--as in reading, taking a test, talking with a counselor

12. Student Acquaintances

From: making friends with different kinds of people--breadth
To: serious conversations with people who differ from you--depth

13. Topics of Conversation

From: personal and interpersonal topics of immediate experience--jobs, movies, social events
To: intellectual and cultural topics concerning values and social issues

14. Information in Conversations

From: conversations in which information about the topic is relatively casual and infrequently introduced
To: conversations that typically have expertise knowledge, and persuasiveness brought to bear on the topic

APPENDIX 5

Factor Loadings of the College Student Experiences Questionnaire Quality of Effort Scales

	Factor 1 (Social Inv)	Factor 2 (Acad Involv)	Factor 3 (Arts)
Library Experiences	.11104	.55794*	.15082
Experiences w/ Faculty	.26695	.44067*	.26615
Course Learning	.26241	.64947*	.04309
Experience in Writing	.36111	.57632*	.01020
Science/Technology	.25656	.31565*	-.21292
Student Union	.38811*	.21665	.17144
Athletic & Rec Facil	.25939*	.17430	-.00932
Clubs & Organizations	.38548*	.38183	.29955
Personal Experiences	.52717*	.23139	.12960
Dormitory	.76895*	.12553	-.03266
Topics of Connversation	.56109*	.25828	.21035
Information in Convers	.56410*	.40757	.15148
Art, Music, Theater	.12014	.08888	.67315*

APPENDIX 6

Coding of Background Variables

1. Gender: Categorical data, dummy coded, (0) male or (1) female.

2. Residence Status: Categorical data, dummy coded, (0) Virginia resident or (1) Non-Virginian. This variable determined whether or not the student benefited from reduced tuition by attending an in-state public institution.

3. Parental Education: Sum of the ordinal codes representing the highest educational attainment of both father and mother. Categories were (1) high school or less, (2) some college or post-high school education, (3) bachelor's degree, (4) master's degree, (5) medical or law degree, (6) doctoral degree. In cases where either parent's educational background was not reported, the group mean of the missing item was substituted when computing the parental education variable.

4. Distance from Home to College: Categorical data, dummy coded. The three categories were: 0 to 75 miles, 76 to 150 miles, and over 150 miles.

5. Intended Major Program: Categorical data, dummy coded. The four categories were: Social Sciences, Humanities, and Fine Arts; Natural Sciences and Mathematics; Business Administration; and Undecided.

6. High School Rank in Class: Decile rank in the high school class at the time of graduation. In cases where high schools did not report rank, the group mean was substituted for this variable.

7. SAT Scores: Both the verbal and math sections of the SAT were used as variables in the analyses.

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