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ABSTRACT

The major purpose of the present study was to answer a series of related questions concerning college dropouts: What is the current dropout rate nationally among students attending colleges in the United States? How do dropout rates vary by type of institution? In what ways do dropouts and nondropouts differ? What factors in the college environment affect the student's chances of dropping out? How much difference does the student's ability make? How important are background factors such as sex, race, and parental background? The data were obtained from students attending a representative sample of 217 institutions, including 2-year colleges, 4-year colleges, and universities. The major findings can be summarized as follows: (1) national dropout rates seem to be somewhat lower than has been suggested in other recent reports; (2) dropout rates at 2-year colleges are somewhat higher than those at 4-year colleges; (3) the major predictors of persistence are the student's grades in high school and his scores on tests of academic ability; and (4) using predictors of the student's persistence in a multiple regression equation, it is possible to compute an expected persistence rate at individual colleges. (HS)

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College Dropouts: A National Profile

ALEXANDER W. ASTIN

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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COLLEGE DROPOUTS: A NATIONAL PROFILE

Alexander W. Astin

American Council on Education

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College Dropouts: A National Profile[1]

Alexander W. Astin

American Council on Education

The college dropout has been the subject of an extensive literature during recent years. Since most empirical studies of dropouts have been carried out either at single institutions or in individual states, however, their findings may give a very misleading picture of the national scene. Even the few published national studies (e.g., Iffert, 1957; Trent and Medsker, 1968; Astin and Panos, 1969) suffer from one or more potentially serious defects: incomplete sampling of institutions, inadequate student input data, or complete reliance on student responses to mailed followup questionnaires. In addition, these earlier studies are dated; the most recent findings go as far back as the period from 1961 to 1965 (Astin and Panos, 1969).

This report is based on data obtained from students attending a representative national sample of 217 institutions. These institutions, participants in the Council's Cooperative Institutional Research Program (CIRP) since the fall of 1966, include two-year colleges, four-year colleges, and universities. The major purpose of this study was to answer a series of related questions concerning

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[1]This research was supported in part by grant GR-101 from the National Science Foundation and in part by general funds from the American Council on Education. We are indebted to the representatives from each institution participating in the Cooperative Institutional Research Program, who kindly provided us with four-year followup data on their 1966 entering freshmen. Special acknowledgement and thanks are also due Terry G. Mahn, who carried the main burden of responsibility for the computer analyses of data.

college dropouts: What is the current dropout rate nationally among students attending colleges in the United States? How do dropout rates vary by type of institution? In what way do dropouts and nondropouts differ? What factors in the college environment affect the student's chances of dropping out? How much difference does the student's ability make? How important are background factors such as sex, race, and parental income?

Method

The basic sample of institutions for this study consisted of those colleges and universities that participated in the Cooperative Institutional Research Program during the fall of 1966 (Astin, Panos, and Creager, 1967). This sample, which originally comprised 251 institutions randomly selected from a 33-cell stratification design, was reduced to 217 participants as a result either of data processing errors (5 institutions) or of the institution's inability or unwillingness to provide complete followup data in 1970 (29 institutions). Except for a slight overrepresentation of two-year colleges, the 34 institutions that were dropped from the followup study did not differ significantly from the 217 institutions that participated with respect to selectivity, type (four-year college, university), or control (public, private nonsectarian, Roman Catholic, Protestant). The final stratification weights (see below) were, of course, adjusted to reflect the loss of these 34 institutions.

During the fall 1966 orientation and registration period, each first-time freshman entering these 217 institutions completed

a 150-item Student Information Form (SIF) covering such background information as age, sex, race, religion, parents' income and education, and high school achievements. The SIF also included questions about the student's educational and career plans, life goals, daily activities, self-concept, and expectations about college. (A copy of the SIF is provided in the Appendix to this report.)

For the followup, samples of approximately 250 students were selected from each institution. The 250 were selected randomly from the larger institutions; in those institutions enrolling 300 or fewer students, all students were followed up. Thus, the total number from whom longitudinal data were collected was 51,721: 6,289 in two-year colleges, and 45,432 in four-year colleges and universities.

Preliminary one-year followup data were collected in the fall of 1967, when each institution was sent a roster listing the names of the students who had been selected for the longitudinal study. The institutional representative provided information not only on freshman GPAs and dropout status, but also on scores (if available) on the Scholastic Aptitude Test (SAT) or American College Test (ACT) taken by the students when they were in high school. Since the results have been reported elsewhere (Astin, 1968; 1971), these one-year followup data will not be discussed further here.

Four-year followup data were obtained during the fall of 1970 and the winter of 1970-71, when identical rosters of names were again sent to each institution. Representatives were asked to

answer four items of information on each student:

1. Had the student obtained any degree (baccalaureate or associate) by the time of the followup in fall 1970?

2. When was the student last enrolled for credit toward a degree (1966-67, 1967-68, 1968-69, 1969-70, or currently)?

3. Was his transcript ever sent to another academic institution?

4. What was his cumulative grade-point average (GPA)?

On the basis of the data provided by each institution, four different measures, designed to determine retention or dropout status, were developed; they differed slightly for the two-year and the four-year colleges. The four measures for students attending four-year colleges were as follows:

1. Returned for at least a second undergraduate year.

2. Received the bachelor's degree (or equivalent).

3. Received the bachelor's degree or was still enrolled for work toward the degree in fall 1970.

4. Received the bachelor's degree, was still enrolled for work toward the degree, or had transcripts sent to another institution.

A similar set of measures was developed for two-year college students, except that the associate's degree replaced the bachelor's degree in measures #2-4.

Strictly speaking, the first measure is not an index of dropout status, since it does not relate directly to the completion of degree requirements. It was included to provide a measure of persistence

that holds for students at both two-year and four-year colleges. The second measure is, of course, the most stringent definition of persistence, since it classifies as dropouts all students in five-year programs and all students who left their first institution to complete their degree work elsewhere. The third measure is somewhat less so, in that it considers students who were still working toward a degree in the same institution as nondropouts. (Note also that students who had significantly delayed completing their degrees because they dropped out for a time and then reenrolled are not regarded as dropouts by this definition.) The fourth definition narrows the field considerably, since it classifies as dropouts only those students who left their first institution without completing a degree and who never requested that their transcripts be sent to another institution. This measure is a conservative one, since it classifies as nondropouts (a) all students who requested that their transcripts be sent but who may never have actually entered another institution, and (b) all students who may have reenrolled at a second institution but subsequently dropped out. Of course, those students who left their first institution and entered another without attempting to transfer credits from their first institution would be classified as dropouts by this definition, but it seems likely that their numbers are far exceeded by those who requested transcripts but never entered (or subsequently dropped out of) the second institution.

While the third measure classifies as dropouts those students who left their first institution and subsequently may have completed their degree at another, it treats those currently enrolled students

who may eventually drop out as nondropouts. Since the latter are probably outnumbered by the former, it seems likely that the true national figure for dropouts in the population falls somewhere between the third and fourth definitions. It should be recognized, however, that there can never be a wholly satisfactory definition of the term dropout until all students either obtain their degrees or die without obtaining a degree; any former student can, in theory, go back to school at any time to complete his degree.

Weighting Procedure

Estimates of national dropout rates were obtained by means of three sets of weights which were applied to the dropout data from each college. The first weight consisted of the ratio between the total number of first-time freshmen entering the college in the fall of 1966 (U.S. Office of Education, 1968) and the number of students who were randomly sampled for the four-year followup in the fall of 1970. This weight was calculated separately for men and women. Thus, if a college enrolled 750 freshman men in 1966, but only 250 were selected at random for the followup, the first weight for men is 750/250 or 3.00.

The second weight consisted of the ratio between the total number of 1966 freshmen entering all institutions in the population within a given sampling cell, and the total number of freshmen entering our sample of institutions within that cell. As with the first weight, this second weight was computed separately by sex. The data used for computing the second set of weights are given in Table 1.

Table 1

Stratification and Sampling of Institutions for the 1966 Cooperative Institutional Research Program of the American Council on Education

Stratification Cell	Number of Institutions in Sample	Total First-time Freshmen in 1966			
		Sample Institutions		All Institutions	
		Men	Women	Men	Women
Universities					
Selectivity below 500 or unknown	11	15,316	10.865	65,066	44,178
Selectivity 500-549	13	18,192	13,386	65,859	48,197
Selectivity 550-599	13	16,373	11,419	65,714	45,488
Selectivity 600 or more	17	18,401	11,661	57,670	33,428
Public four-year colleges					
Selectivity below 450 or unknown	9	2,667	2,798	67,571	55,377
Selectivity 450-499	7	5,067	4,320	42,057	36,268
Selectivity 500 or more	10	7,385	2,910	41,999	41,767
Private nonsectarian four-year colleges					
Selectivity below 500 or unknown	13	3,130	2,147	44,764	25,265
Selectivity 500-574	6	1,051	755	7,444	8,457
Selectivity 575-649	13	3,155	1,635	11,765	7,953
Selectivity 650 or more	16	3,104	2,367	7,874	7,957
Roman Catholic four-year colleges					
Selectivity below 500 or unknown	10	759	1,140	12,228	10,445
Selectivity 500-574	10	1,122	1,425	13,192	12,644
Selectivity 575 or more	11	1,116	2,225	6,768	7,842
Other sectarian four-year colleges					
Selectivity below 450 or unknown	7	686	543	12,746	12,282
Selectivity 450-499	4	768	523	9,661	9,000
Selectivity 500-574	7	881	838	12,046	12,165
Selectivity 575 or more	12	2,516	2,993	9,591	8,937
Two-year colleges					
Selectivity below 400	4	2,697	2,382	52,634	38,295
Selectivity 400 or more	7	9,151	6,667	97,687	76,718
Expenditures below $1,000/student	7	2,518	811	113,255	68,977
Expenditures $1,000/ student or more	5	2,132	1,548	56,049	34,562
Predominantly black colleges	7	1,862	1,640	19,669	22,950

Note: Selectivity is an estimate of the average academic ability of the entering freshmen. In the total population of institutions, the mean and standard deviation for selectivity have been set at 500 and 100, respectively.

The final weight consisted of the product of the first two weights. For example, if the first weight for men at a particular college was 3.00, and the second weight for men was 5.00 for that college's stratification cell, then the followup data from all men would be weighted 3 X 5 or 15 times. Consequently, every male dropout and nondropout from that college would be counted 15 times.[2]

Perhaps the most stringent control exercised by this particular method of weighting (where each weight is calculated separately for men and for women) is over the effects of sex on dropping out. Further, the stratification design for institutions is intended to control for sampling errors in student ability, institutional selectivity, institutional type (two-year college, four-year college, university), race (predominantly black, predominantly white), and control (public, private nonsectarian, Catholic, Protestant). Since most research on attrition has shown that the best predictors of dropping out are the student's ability and sex and the institution's selectivity (Astin, 1971), these stratification and weighting procedures probably control for most serious sources of sampling error. Thus, it seems safe to conclude that we have computed reasonably accurate estimates of the actual dropout rates for the entire population of freshmen that entered colleges in the

[2]Since some institutions do not routinely keep records of the transcripts they send to other institutions, not all of them were able to provide all the necessary information required for the fourth measure. It was thus necessary to recalculate the first weight for that dependent variable. All 217 institutions did, however, provide the information requested for the three other dependent variables (returning for a second year, receiving a degree, or being currently enrolled).

United States during the fall of 1966.

Results

Table 2 shows the weighted national estimates of persistence rates for the class of 1970. (For weighted totals by institutional stratification cell, see Table A1 in the Appendix.) The data for the first measure indicate that, of those students in the four-year colleges and universities who had not received a degree or were not still enrolled after four years, nearly half had returned for at least a second year. Close to half (47 percent) of the sample were nondropouts even by our most stringent definition of persistence: received a bachelor's degree at the same institution four years after entering. And if we include in the category those students who were still enrolled and working toward a degree four years after entering, the dropout rate was less than half (41.5 percent). Moreover, about half these "dropouts" requested that transcripts be sent to another institution. It seems safe to assume that some of those students who were still enrolled would soon obtain the degree, and still others who had transferred to another institution had already received them.[3] In short, the

[3]A questionnaire survey of these students , which was conducted in the summer of 1970 (50 percent return), indicates that about one-third of the students who were "dropouts" from four-year colleges and universities as defined by our third measure (no degree and not still enrolled) had actually obtained bachelor's degrees elsewhere. Among those who were "dropouts" as defined by the last measure (no degree, not still enrolled, no transcript requested), 13 percent reported that they had obtained bachelor's degrees elsewhere. Among students at two-year colleges, nearly one-third of those who were "dropouts" as defined by the third measure and 11 percent of those who were "dropouts" on the last measure had obtained either associate's or bachelor's degrees (see Table A2 in the Appendix). Currently we are developing weights to compensate for questionnaire response bias in this followup; results will be presented in a subsequent report.

Table 2

National Persistence Rates for College Students, by Sex
(Class of 1970, Four Years After Entering College)
(Weighted Population Estimates)

Percentage of Students Who:	Two-Year Colleges			Four-Year Colleges and Universities		
	Men (N=318,273)	Women (N=216,980)	All Students (N=535,253)	Men (N=562,142)	Women (N=440,238)	All Students (N=1,002,380)
Returned for a second year	67.0	64.5	66.0	78.7	77.1	78.0
Received a degree*	36.6	41.2	38.4	45.2	48.6	46.7
Received a degree or was still enrolled	38.9	42.8	40.5	60.7	55.6	58.5
Received a degree, was still enrolled, or requested that a transcript be sent to another institution	65.5	66.5	65.9	83.5	78.3	81.2

*Associate degree for two-year colleges; bachelor's degree for four-year colleges and universities.

dropout rate for students entering four-year colleges and universities is below 50 percent, even after only four years, and will continue to decrease as additional students still enrolled complete their degrees.

These data show that persistence rates for college students in the United States are substantially higher than what has been reported elsewhere, particularly in the widely-cited "Newman Report" (Newman et al., 1971). Trent and Medsker (1968) also report somewhat lower rates for 1959 freshmen followed up in 1963, although they used a somewhat different measure of persistence and did not attempt to obtain a representative sample of college freshmen. The figures reported by Astin and Panos (1969) for freshmen entering four-year colleges and universities in 1961 and followed up in 1965 indicate that persistence rates may not have declined (as many have claimed) in recent years: 56 percent of the men and 55 percent of the women reported that they had neither dropped out of their first college nor changed colleges during the four years after matriculating. In the present study, 61 percent of the men and 56 percent of the women either received a degree from their first institution or were still enrolled in that institution after four years (the more recent figures may be somewhat higher because they would include as "nondropouts" those students who dropped out for a while, and then returned to their first college). Finally, there is a recent longitudinal study based on a small subsample from the U.S. Census (Jaffe and Adams, 1971), which indicates that 72

percent of those entering four-year colleges in 1966 (N=406) and 50 percent of those entering two-year colleges in 1966 (N=155) were still enrolled two years later in 1968. These figures compare reasonably well with the ones from the current report (78 percent of those entering four-year colleges and 66 percent entering two-year colleges returned for a second year), although it should be kept in mind that the Jaffe-Adams report was based on a very small sample and used a quite different method of collecting data.

Men and women in four-year colleges differed in their dropout patterns. Women were slightly more likely than men to obtain the degree within four years after entering college. An additional 15 percent of the men, however, as compared with only 7 percent of the women, were still enrolled four years after matriculation. This discrepancy is probably accounted for by the high concentration of men in five-year programs such as engineering and architecture.

Students in two-year colleges were somewhat less likely than were students in four-year colleges and in universities to persist, even though it usually takes only two years to complete an associate's degree. About one-third of all students entering two-year colleges did not return for a second year. Of those who did, fewer than two in three ultimately obtained the associate's degree. Of the approximately 60 percent of all students at two-year colleges who did not receive a degree and were not still enrolled at their first college after four years, only

about one in four requested that transcripts be sent to another institution.

Women entering two-year colleges were more likely to complete the associate's degree than were men, though a slightly higher percentage of men returned for a second year.

The higher dropout rates for two-year colleges are not surprising, considering that students who enter these colleges seem to be somewhat less motivated in the first place. Earlier evidence (Astin, Panos, and Creager, 1967) showed that about 11 percent of all students entering two-year colleges in the fall of 1966 did not intend to obtain even the associate's degree. The comparable figure for students in four-year colleges and universities was 3.8 percent. Similarly, 17.4 percent of students entering two-year colleges, compared with 1.7 percent of students entering four-year colleges and universities, reported that they aspired only to an associate's degree.

These data can also be regarded as representing realized and unrealized expectations. When one considers that nearly 90 percent of all two-year college students expected to obtain at least the associate's degree when they entered college, but that 60 percent left their first college without having received the degree, and that fewer than half of these even requested that their transcripts be forwarded to a second institution, it may certainly be said that unfilled expectations are the rule rather than the exception among two-year college students. The same is true, of course (though to a lesser extent), of students

at four-year colleges and at universities: Although nearly 95 percent aspired to at least the baccalaureate when they entered in 1966, more than 40 percent had left their first institution without the degree four years later. Of those who dropped out of their first institution, only about half ever had transcripts sent to a second institution.[4]

National persistence rates for black and nonblack students are shown in Table 3. Black students had somewhat lower rates than nonblacks on all four measures of persistence, though the differences were somewhat greater at the two-year colleges than at the four-year colleges and the universities.

Why is it that women and blacks have higher dropout rates than do white male students? Is their lack of persistence attributable to their sex and race per se? Or can it be traced to initial differences in ability? To explore these questions, we sorted men and women, blacks and nonblacks, into nine ability groupings based on two variables that are known to predict attrition (Astin, 1971): the student's score on a test of academic aptitude and his average grade in high school (see Table 4; this analysis was performed only for students attending four-year colleges and universities). The distribution of the four groups across the nine ability categories is consistent with

[4]The questionnaire survey conducted in the summer of 1970 revealed that many dropouts still intended eventually to obtain degrees. Among those four-year college and university students who had no degree and were not still enrolled, 84 percent still planned to obtain the bachelor's degree, and fully 51 percent intended to obtain a graduate degree. The comparable percentages for dropouts at two-year colleges were 69 percent and 33 percent (see Table A2 in the Appendix).

Table 3

National Persistence Rates for Black and Nonblack Students
(Class of 1970, Four Years After Entering College)
(Weighted Population Estimates)

Percentage of Students Who:	Two-Year Colleges			Four-Year Colleges and Universities		
	Blacks (N=30,769)	Nonblacks (N=504,484)	All Students (N=535,253)	Blacks (N=51,761)	Nonblacks (N=950,619)	All Students (N=1,002,380)
Returned for a second year	62.3	66.2	66.0	75.8	78.1	78.0
Received a degree*	29.4	39.0	38.4	42.1	47.0	46.7
Received a degree, or were still enrolled	30.6	41.1	40.5	56.2	58.6	58.5
Received a degree, were still enrolled, or requested that a transcript be sent to another institution	56.9	66.4	65.9	73.0	81.5	81.2

*Associate degree for two-year colleges; bachelor's degree for four-year colleges and universities.

Table 4

Distribution of Students by Ability, Race, and Sex
(Four-Year Colleges and Universities)
(Unweighted Data)

Aptitude Test Interval[a]	Average Grade in High School[b]	Men		Women	
		Black	Nonblack	Black	Nonblack
Low	C	366	1,063	269	668
Low	B	384	657	417	1,170
Low	A	26	48	43	123
Middle	C	108	3,534	64	1,371
Middle	B	139	5,163	143	5,938
Middle	A	27	680	27	1,497
High	C	19	1,692	5	362
High	B	107	8.079	72	5,514
High	A	31	4,017	47	4,147

[a]High includes all students with SAT V+M above 1054; middle includes all between 838 and 1054; low includes all below 838.

[b]A includes A+, A, and A-; B includes B+, B, and B-; C includes C+, C, and D.

established differences: nonblack students make slightly better grades in high school and score substantially higher on tests of academic ability than do black students, and women make substantially higher grades but slightly lower test scores than do men.

The performance of each of the 36 groups on each of the four measures of persistence are shown in Table 5. The contrast between nonblack men and women is the most striking. Of the 36 possible comparisons between these two groups (nine ability categories and four measures of persistence), nonblack women had higher dropout rates in every case but one (students with low aptitude test scores and A grades on "returned for a second year"). This finding is especially surprising when one realizes that, nationally, women showed somewhat greater persistence as measured by the percentage who received the bachelor's degree within four years. Apparently, this greater persistence is attributable entirely to the women's superior grades in high school.

The picture for black men and women is much different. Black women when compared with black men of comparable ability were somewhat more likely to receive a bachelor's degree within four years, but black men were somewhat more persistent as defined by the last measure (received a degree, was still enrolled, or requested a transcript). Apparently, black men were more likely to transfer to a second institution than were black women of comparable ability.

Table 5

Effects of Race and Sex on Persistence in College
(Unweighted Data for Four-Year Colleges and Universities)

Aptitude Test Interval[a]	Average Grade in High School[b]	Returned for Second Year				Received Bachelor's Degree				Received Degree, or Still Enrolled				Received Degree, Still Enrolled, or Requested Transcript			
		Men		Women		Men		Women		Men		Women		Men		Women	
		Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black
Low	C	65	65	62	59	28	28	28	26	47	40	43	33	81	74	76	67
Low	B	68	77	70	68	37	41	42	38	51	55	51	44	88	86	84	76
Low	A	73	69	81	76	48	49	67	48	63	57	69	56	100	82	90	78
Middle	C	69	62	6I	61	30	32	27	29	44	43	42	35	81	80	68	72
Middle	B	70	75	76	70	38	45	55	44	53	58	60	49	88	88	84	83
Middle	A	78	78	85	74	52	57	68	52	56	67	68	57	94	95	92	89
High	C	68	76	--	68	22	42	--	36	35	54	--	43	93	88	--	83
High	B	82	83	71	80	57	56	32	55	67	67	36	60	92	93	83	90
High	A	77	89	96	85	65	70	77	65	68	78	79	69	100	97	98	95

[a]High includes all students with SAT V+M above 1054; middle includes all between 838 and 1054; low includes all below 838.

[b]A includes A+, A, and A-; B includes B+, B, and B-; C includes C+, C, and D.

The differences between black and nonblack students matched on ability were smaller than the differences between men and women. Of the 36 comparisons involving men, the number favoring blacks was about equal to the number favoring nonblacks. Among women, however, the comparisons favored blacks over nonblacks (25 to 6, with 5 about even). These findings are especially significant, in view of the fact that black and nonblack students are not precisely "matched" in terms of ability. That is, among the low-ability students, blacks made somewhat lower test scores than did nonblacks, and conversely, among the high-ability students, nonblacks made somewhat higher test scores than did blacks. Even though this imprecision in the matching process would tend to favor the nonblack over the black students, the data in Table 5 suggest that persistence rates for blacks (especially black women) were at least as high as, and probably higher than, persistence rates for nonblack students of comparable ability.

Academic Ability and Persistence in College

For many years now, most selective colleges and universities, in their admissions practices, have relied heavily on two measures: the student's high school grades and his scores on tests of academic ability. Are these two measures valid indicators of the student's chances of staying in college? To what extent do these criteria predict who will drop out of and who will stay in college? Table 6 shows the weighted national persistence rates for students entering four-year colleges and universities; they have been classified by their average grade

Table 6

Effects of High School Grades on Persistence in Four-Year Colleges and Universities (Weighted Data)

Average Grade in High School	Number of Students		Percentage			
	Actual*	Weighted	Returned for Second Year	Received Bachelor's Degree	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled, or Requested Transcript
A or A+	3,965	63,896	88	66	75	93
A-	6,276	113,381	86	62	72	90
B+	9,488	195,773	84	54	66	86
B	10,542	240,857	80	48	60	81
B-	6,294	148,378	75	41	53	80
C+	5,236	139,674	70	35	48	74
C	3,518	95,842	62	27	38	68
Less than C	178	4,579	55	23	38	67

*Ns about 40 percent lower for the last measure (Received degree, was still enrolled, or requested transcript.

in high school as reported on the Student Information Form administered in the fall of 1966. Clearly, there is a consistent relationship between academic performance in high school and persistence as defined by all four of our measures. For example, students with A or A+ averages in high school were nearly three times as likely to receive their bachelor's degree within four years as were students who made grades lower than C in high school.

Are high school grades also accurate predictors of the persistence of students enrolling at two-year colleges? The data shown in Table 7 indicate that they are, although perhaps to a lesser degree than was the case with students at four-year colleges and universities. At the two-year colleges, high school grades predicted measures #2 and 3 fairly well, but were only mediocre predictors of measure #1 (returning for a second year). In fact, students with B averages seemed to be no more likely to return for a second year than were students with C averages.

The relationship between ability test scores and persistence for students who entered four-year colleges and universities is shown in Table 8. SAT and ACT scores provided by institutions were converted to a common scale by a technique devised in an earlier followup study (Astin, 1971). Those students for whom scores were not available (approximately one-third of the followup sample) were assigned the mean score for their institution, as reported in the same study (Astin, 1971). Again, we find confirmation for the validity of traditional admissions criteria:

Table 7

Effects of High School Grades on Persistence in Two-Year Colleges
(Weighted Data)

Average Grade in High School	Number of Students		Percentages			
	Actual*	Weighted	Returned for Second Year	Received Associate's Degree	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled, or Requested Transcript
A or A+	64	4,674	72	62	64	88
A-	185	13,435	72	50	50	78
B+	445	32,861	63	47	48	77
B	1,115	92,408	68	46	47	73
B-	1,193	96,468	69	41	44	69
C+	1,723	139,073	66	39	41	64
C	1,752	147,474	63	29	31	57
Less than C	111	8,860	57	25	29	56

*Ns about 5 percent lower for the last measure (Received degree, was still enrolled, or requested transcript.

Table 8

Effects of Aptitude Test Scores on Persistence in Four-Year Colleges and Universities (Weighted Data)

Level of Aptitude Test Score		Number of Students		Percentage			
SAT V+M	ACT Composite	Actual*	Weighted	Returned for Second Year	Received Bachelor's Degree	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled, or Requested Transcript
>1469	>31	279	2,832	91	72	80	96
1381-1469	30-31	1,364	14,125	94	69	77	95
1297-1380	29-30	3,016	37,963	92	66	78	94
1216-1296	28-29	5,500	76,519	87	56	69	88
1134-1215	26-27	5,883	116,728	85	52	67	89
1055-1133	24-25	7,047	148,175	83	53	65	87
980-1054	23-24	7,773	197,675	78	48	59	81
907- 979	21-22	6,187	164,683	71	39	50	80
838- 906	19-20	3,530	87,038	71	39	50	75
770- 837	17-18	2,405	89,631	73	39	49	70
<770	<17	2,513	67,011	67	30	49	67

*Ns are about 40 percent lower for the last measure (Received degree, was still enrolled, or requested transcript.

Persistence is closely related to academic ability as measured by college admissions tests. Students in the highest interval, for example, were more than twice as likely to obtain the bachelor's degree after four years than were students in the lowest interval. As was the case with high school grades, persistence, as reflected in all four measures, increased consistently as aptitude test scores rose. (The relation between persistence and academic ability test scores for students in two-year colleges is not shown, since test score data were available for only about one-third of these students.)

Since high school grades and aptitude test scores were positively related to each other, it is important to determine whether persistence can be predicted more accurately by using these two measures in combination, or whether the predictive value of one is accounted for by the other. To explore this question, we sorted students by high school grades and test scores simultaneously, and then calculated the persistence rates for each combination of grades and test scores. Tables 9-12 show the results of these analyses, with one table devoted to each measure of persistence.

These tables make it clear that both measures contributed independently to the prediction of persistence. Thus, by selecting any level of aptitude test score and reading across the row from the lower to the higher grade averages, one will see that the percentages climb steadily. In other words, there was a consistent positive relationship between persistence and high school grades, even when the student's level of academic aptitude was held

Table 9

Returned for a Second Year:
Effects of High School Grades and Aptitude Tests
(Weighted Percentages for Four-Year Colleges and Universities)

Level of Aptitude Test Score		Average Grade in High School							
SAT V+M	ACT Composite	Below C	C	C+	B-	B	B+	A-	A or A+
>1469	>31	--	--	--	--	--	93	96	97
1381-1469	30-31	--	--	--	87(48)	95	94	95	94
1297-1380	29-30	--	82(29)	84	92	89	91	94	92
1216-1296	28-29	--	82	81	78	89	86	89	92
1134-1215	26-27	--	70	81	83	85	86	87	87
1055-1133	24-25	--	68	75	81	82	87	88	88
980-1054	23-24	--	62	72	74	80	83	83	83
907- 979	21-22	47(37)	58	66	71	74	80	80	78
838-906	19-20	42(32)	65	69	71	73	77	81	81
770-837	17-18	--	67	69	74	75	84	33	76(29)
<770	<17	47(32)	55	67	69	77	75	74	--

Note: Data for cells with fewer than 25 subjects are not shown. In cells where the percentages are based on fewer than 50 subjects, the actual N is shown in parentheses after the percentage.

Table 10

Obtained the Bachelor's Degree: Effects of High School Grades and Aptitude Test Scores
(Weighted Percentages for Four-Year Colleges and Universities)

Level of Aptitude Test Score		Average Grade in High School							
SAT V+M	ACT Composite	Below C	C	C+	B-	B	B+	A-	A or A+
>1469	>31	--	--	--	--	--	78	70	81
1381-1469	30-31	--	--	--	58(48)	53	65	74	76
1297-1380	29-30	--	42(29)	47	55	54	66	70	74
1216-1296	28-29	--	42	41	41	49	55	66	74
1134-1215	26-27	--	29	41	46	52	53	60	60
1055-1133	24-25	--	32	38	48	54	59	66	66
980-1054	23-24	--	28	37	42	49	55	62	59
907- 979	21-22	11(37)	26	32	38	44	47	51	54
838- 906	19-20	11(32)	30	37	40	43	43	48	55
770- 837	17-18	--	27	33	39	41	55	61	64(29)
<770	<17	14(32)	19	28	30	42	38	49	--

Note: Data for cells with fewer than 25 subjects are not shown. In cells where the percentages are based on fewer than 50 subjects, the actual N is shown in parentheses after the percentage.

Table 11

Obtained the Bachelor's Degree or Was Still Enrolled:
Effects of High School Grades and Aptitude Test Scores
(Weighted Percentages for Four-Year Colleges and Universities)

Level of Aptitude Test Score		Average Grade in High School							
SAT V+M	ACT Composite	Below C	C	C+	B-	B	B+	A-	A or A+
>1469	>31	--	--	--	--	--	84	76	88
1381-1469	30-31	--	--	--	69(48)	65	77	81	79
1297-1380	29-30	--	48(29)	57	76	69	79	80	83
1216-1296	28-29	--	58	60	56	68	68	75	79
1134-1215	26-27	--	46	59	63	67	69	70	72
1055-1133	24-25	--	41	54	60	65	69	76	76
980-1054	23-24	--	39	49	53	60	66	71	70
907- 979	21-22	33(37)	37	44	50	55	58	60	63
838- 906	19-20	23(32)	40	46	50	53	54	60	62
770- 837	17-18	--	39	45	47	51	63	68	64(29)
<770	<17	27(32)	32	43	44	55	54	62	--

Note: Data for cells with fewer than 25 subjects are not shown. In cells where the percentages are based on fewer than 50 subjects, the actual N is shown in parentheses after the percentage.

Table 12

Obtained the Bachelor's Degree, Was Still Enrolled, or Requested Transcript:
Effects of High School Grades and Aptitude Tests
(Weighted Percentages for Four-Year Colleges and Universities)

Level of Aptitude Test Score		Average Grade in High School							
SAT V+M	ACT Composite	Below C	C	C+	B-	B	B+	A-	A or A+
>1469	>31	--	--	--	--	--	99(37)	85(42)	99
1381-1469	30-31	--	--	--	93(28)	83	98	99	95
1297-1380	29-30	--	--	93	89	91	93	96	97
1216-1296	28-29	--	85(47)	80	77	84	87	93	95
1134-1215	26-27	--	79	82	87	88	87	92	96
1055-1133	24-25	--	77	80	86	87	90	91	88
980-1054	23-24	--	66	74	80	80	86	89	88
907- 979	21-22	73(27)	75	77	80	80	84	84	93
838- 906	19-20	57(29)	67	73	78	78	80	84	92(29)
770- 837	17-18	--	67	68	71	69	75	80	--
<770	<17	54(27)	55	68	73	75	73	71(33)	--

Note: Data for cells with fewer than 25 subjects are not shown. In cells where the percentages are based on fewer than 50 subjects, the actual N is shown in parentheses after the percentage.

constant. Correspondingly, if one selects any column of figures and reads up from the bottom, he will almost invariably find that the percentages increase. Thus, aptitude test scores predicted persistence even when high school grades were held constant. In short, students with the best grades and highest test scores were two to four times more likely (depending on the measure used) to persist in college than were students with the lowest grades and lowest test scores. Indeed, by the most liberal definition of persistence (measure #4; Table 12), virtually none of the students with the highest grades and the highest test scores dropped out. Conversely, if one considers the most stringent definition of persistence (obtaining the bachelor's degree within four years, Table 10), more than 80 percent of the students with the lowest test scores and grades dropped out.

Predicting Who Will Drop Out

Tables 9-12, in the previous section, show clearly that a given student's chances of dropping out are affected by his high school grades and his ability test scores. As was pointed out previously, these two measures are used by many--but not all--institutions as their chief criteria for admissions. It is reasonable to expect, therefore, that the dropout rates of institutions will vary simply by virtue of differences in their admissions policies. Given these differences, one must first take into account the characteristics of freshmen entering an institution before one can determine its impact of the persistence of its students, relative to that of other institutions.

Thus, to assess comparative institutional effects, we first pooled students across colleges and next conducted regression analyses to determine those characteristics of the entering freshman that predict his chances of staying in or dropping out of college. The weights derived from these analyses were then used to determine if the dropout rates of individual colleges were above, below, or equal to what one would expect from the characteristics of their entering freshmen.

Two subsamples were selected for the regression analyses: a one-fifth systematic sample (every Nth subject from the data file) of all students attending four-year colleges or universities (N=9,084), and all students attending two-year colleges (N=6,287). For each of these two subsamples, four separate regression analyses were carried out, one for each of the four dropout measures.

The 134 predictor variables for each analysis consisted of the following precollege measures:

Demographic (21 variables)

Sex

Age

Father's education

Mother's education

Race (5: white, black, Oriental, American Indian, other)

Religious background (4: Protestant, Catholic, Jewish, none)

Current religious preference (4: Protestant, Catholic, Jewish, none)

Type of high school (4: public, private denominational, private nondenominational, other)

Financial (11 variables)

Parents' income

Major source of college finance (9: employment during school year; summer employment; scholarship; G.I. Bill; personal savings; deferred tuition or college loan; parental aid; Federal government loan; commercial loan)

Degree of concern about college finances

Secondary school activities (19 variables)

Average high school grade

Ability test score

Achievements (12: president of high school organization; had major part in high school play; won varsity letter; etc.)

Behaviors (5: came late to class; smoked cigarettes; overslept and missed a class or appointment; cribbed on an exam; turned in a paper or theme late)

Self-Ratings (21 variables: academic ability, originality, cheerfulness, etc.)

Plans and Aspirations (55 variables)

Level of degree aspirations

Plans to attend graduate school

Plans to obtain the Ph.D. or Ed.D.

Plans to obtain a professional degree

Chances of marrying while in college

Chances of marrying within a year after college

Career choice (15: artist, businessman, clergyman, etc.)

Probable major field of study (17: Biological Sciences, Business, Education, etc.)

Life goals (17: becoming accomplished in performing arts; helping others in difficulty; being well-off financially; etc.)

How College First Came to Student's Attention (7 variables)

Relative

Friend

High school counselor or teacher

Professional counseling or college placement service

College or representative of the college

Other source

Cannot recall

Except for academic ability test scores (which were obtained directly from the institution during the one-year followup), all 134 predictor variables were derived from students' responses to the SIF, administered during orientation or registration in the fall of 1966. Ordinal variables (high school grades, for example) were scored by assigning numbers sequentially from lowest to highest (a grade of D was scored as 1, a grade of A or A+ as 8). Qualitative or nominal variables (the student's race, for example) were scored by creating a series of dichotomous "dummy" variables scored as 1 (the student possessed the characteristic) or 0 (the student did not possess the characteristic).

In each of the eight analyses, the particular dropout measure used as the dependent variable was also scored as a di-

chotomy: 1=nondropout, 0=dropout. The 134 predictor variables were permitted to enter the regression equation in a stepwise fashion until no additional predictor was capable of producing a significant (p = .05) reduction in the residual sum of squares of the dependent variable.

The results of the eight regression analyses are summarized in Table 13. Two stages are shown: (1) the point at which all variables with an F ratio of 25.0 or larger had entered, and (2) the final step, the point at which all variables with an F ratio of 4.0 or larger had entered (4.0 representing approximately the .05 level of confidence). The relatively small multiple correlation coefficients indicate that, in spite of the large number of independent variables used in the analysis, we cannot predict very accurately whether a given student will drop out. Among students attending four-year colleges, receiving the bachelor's degree was the easiest outcome to predict, whereas returning for the second undergraduate year was the most difficult. Among students at two-year colleges, the last persistence measure (received a degree, was still enrolled, or requested transcript) was easiest to predict, while the third--received an associate's degree or was still enrolled--was the most difficult. Generally, the retention rates of four-year colleges and universities could be predicted more accurately than those of two-year colleges.

The principal predictor variables entering the various regression equations are listed in Table 14 in decreasing order

Table 13

Summary of Stepwise Regression Analyses

	F ratio for variable entering greater than 25.0		F ratio for variable entering greater than 4.0	
	Number of Variables (Steps)	R	Number of Variables (Steps)	R
Four-year colleges and universities (N=9,084):				
Returned for second year	5	.215	39	.275
Received bachelor's degree	10	.309	39	.340
Received degree or was still enrolled	9	.285	44	.327
Received degree, was still enrolled, or requested transcript	8	.254	43	.310
Two-year colleges (N=6,287):				
Returned for second year	5	.197	20	.238
Received associate's degree	5	.177	20	.226
Received degree or was still enrolled	3	.130	19	.194
Received degree, was still enrolled, or requested transcript	8	.261	31	.309

Table 14

Freshman Variables Listed in Decreasing Order of Importance for Predicting Persistence in College

Four-Year Colleges and Universities	Two-Year Colleges
Academic ability test score (+)	High school grades (+)
High school grades (+)	Employed during the school year (-)
Plan to marry while in college (-)	Smoked cigarettes (-)
Employed during the school year (-)	Turned in a paper or theme late (-)
Smoked cigarettes (-)	Religious preference: Protestant (+)
Sex (female) (-)	Level of degree aspirations (+)
Level of degree aspirations (+)	Received major support from parents (+)
Turned in a paper or theme late (-)	Received major support from G.I. Bill (+)
Religious preference: None (-)	Attended private (nondenominational) high school (+)
Career choice: engineer (-)	Received major support from government loan (+)
College first suggested by a relative (+)	Received major support from personal savings (+)
Received major support from parents (+)	Sex (female) (-)
Received major support from scholarship (+)	Plan to marry while in college (-)
Major: History or Political Science (+)	Major: History or Political Science (+)
Won a varsity letter in high school (+)	College first suggested by relative (+)
Major: Business (-)	Academic ability (self-rating) (+)
Career choice: nurse (-)	Popularity with opposite sex (self-rating) (-)
College first suggested by placement service (-)	Career choice: elementary school teacher (+)
Drive to achieve (self-rating) (+)	Career choice: Engineer (+)
Receive major support from personal savings (+)	
Helping others in difficulty (life goal) (-)	
Plan to obtain Ph.D. or Ed.D. (-)	
Had a major part in a high school play (-)	
Plan to obtain professional degree (-)	
Concern about financing college (-)	
Plan to marry during year after college (+)	
Social self-confidence (self-rating) (-)	

of importance, as reflected in the beta weights. A predictor variable is listed in the table if it satisfies one of the three following criteria: (1) entered with an F ratio of at least 25.0 in one or more analyses; (2) entered with an F ratio of at least 8.5 (the .01 level of confidence) in two or more analyses; or (3) entered with an F ratio of at least 4.0 (the .05 level of confidence) in at least three analyses. (For separate lists of the beta weights for the more important predictors see the Appendix, Tables B1-B8; for a summary of the F ratios for all significant predictors, see Table B9.)

Results for the various types of freshman predictor variables may be summarized as follows.

Academic Ability and Achievement

By far the most important predictors of persistence for students at four-year colleges and universities are high school grades and ability test scores. The regression coefficients for these variables (see Tables B1-B4) were of about equal size in all four analyses. Average high school grade was clearly the most important predictor of persistence for students at two-year colleges (see Tables B5-B8); ability test scores, however, did not enter any of the four regression solutions for two-year colleges, most probably because these data were lacking for a large proportion of students at two-year colleges.

Finances

Nearly every measure relating to finances entered into at

least six of the eight analyses. Apparently, a student had a better chance of staying in college if he received a major part of his support from his parents, from a scholarship, or from personal savings. These relationships obtain both for students attending two-year colleges and for students attending four-year colleges or universities. In addition, students at two-year colleges were more likely to persist if a major source of their college finances was the G.I. Bill. (That this variable failed to appear in the analyses for students at four-year colleges and universities is probably attributable to there being only a small proportion of students at such institutions who are eligible for G.I. benefits.)

Of special interest is the finding that students at both groups of institutions had less chance of staying in college if they were employed during the school year. Indeed, this variable was the fourth most important predictor of attrition among students at four-year colleges and universities and the second most important among students at two-year colleges. The most obvious explanation of this relationship is that students who work during the school year have less time to devote to studies and therefore drop out because of poor grades, a possibility that has practical implications for national policy regarding work-study programs. It is also possible that students with jobs are less reluctant to drop out when confronted with difficulties during the undergraduate years, because they have an alternative to college already available to them. Whatever

the explanation, this finding should be explored more thoroughly because of its obvious bearing on educational policy.

It should also be noted that parents' income, as such, showed no consistent relationship to persistence in college.

Plans and Aspirations

It is not surprising that the student's plans to marry while in college had a negative relationship to persistence. Bayer (1969), for example, has shown that marriage is one of the single most important determinants of a student's decision to leave college before completing degree requirements. Students at four-year colleges and universities who said that they planned to get married the year <u>after</u> college, on the other hand, were more likely to persist. Perhaps their willingness to state their marriage plans so explicitly reflects a decisiveness of purpose and a strong determination to complete college.

Probable major fields and career choices were significantly related to persistence in several ways. Among students at four-year colleges and universities, the strongest relationship was between the freshman career choice of engineer and failure to obtain the baccalaureate within four years (see Table B2); this "failure" is understandable in that many undergraduate programs in Engineering take more than four years to complete. Note that this career choice had only small negative relationships to the three other measures of persistence and that it was positively related to persistence among students at two-year colleges.

A probable major in Political Science or History was posi-

tively related to persistence among students at both groups of institutions. Freshmen at four-year colleges and universities who named Business as their probable major or nursing as their probable careers were less likely to persist, whereas students at two-year colleges who planned to become elementary school teachers were more likely to remain in college.

It is not surprising that the student's level of degree aspirations (none, associate, bachelor's, master's, and doctorate) was positively related to persistence at both groups of institutions. What is surprising, however, is that two of the "dummy" variables--planning to obtain a professional degree and planning to obtain a Ph.D. or Ed.D.--had <u>negative</u> weights in the final regression solutions for three of the measures at four-year colleges and universities (see Tables B1, B3, and B4). An inspection of the various steps in the multiple regression analysis suggests a possible explanation for this apparent contradiction. Both of these measures had significant positive zero-order correlations with all four measures of persistence: In other words, students who, when they started college, said that they planned to obtain a doctorate or a professional degree were more likely to complete the baccalaureate than were students who did not aspire to these degrees. As certain other measures were controlled, however, the partial correlations between these measures and measures of persistence became negative. The specific variables which most affected these partial correlations were high school grades, sex, aptitude test scores, and level of degree aspirations.

Thus, among students of the same sex, comparable ability, and comparable ambitions as to degree, those who pursued either the doctorate or a professional degree had a somewhat greater chance of dropping out than did those pursuing other types of degrees.

Demographic Attributes

Although the zero-order correlations between sex and persistence were either nonexistent or barely significant, being a woman carried a large negative weight in the final solutions of several of the regression analyses. The reason for this change in relationship is that women entering college tended to have made substantially better grades in high school than did men. When high school grades are controlled, however, the negative relationship between persistence and being a woman appears. In other words, among students of equivalent academic ability, men were more likely to persist in college than were women.

Although the various measures relating to racial/ethnic background did not have a sufficient number of significant relationships to merit inclusion in Table 14, some findings should be noted. As one might guess from the data shown earlier in Table 3, being black had a significant negative zero-order relationship with all four measures of persistence. As other predictor variables were controlled, however, these relationships tended to disappear. In the case of two of the measures at four-year colleges and universities, they actually became positive,

suggesting that the relatively high attrition rates of black students at these institutions were entirely attributable to their relatively low high school grades and ability test scores and that black students at such institutions were, in actuality, somewhat less likely to drop out than were nonblacks whose abilities and past achievements were comparable. This finding did not hold for students in two-year colleges, however, where being black had significantly negative weights in the regression solutions for two of the persistence measures (see Table B9). Apparently, so far as remaining in college is concerned, being black is something of a liability in a two-year college but an asset in a four-year college or a university.

Religious preference had several interesting relationships with persistence. Among students at four-year colleges and universities, those who had no religious preference were clearly more apt to drop out than were students who named a definite preference. Among students attending two-year colleges, those who gave their religious preference as Protestant were more likely to persist in college than were those expressing other preferences. It seems likely that these findings reflect the independence and lack of conventional values associated with dropping out of college (Astin, 1964; Grace, 1957).

Behavior

Two behavioral measures--smoking cigarettes and turning in a paper or theme late--showed strong negative relationships

with persistence for students attending both groups of institutions. The latter may reflect poor study habits or lack of involvement and interest in academic pursuits. Although many earlier studies have indicated that smoking has a negative relationship to academic achievement, the reason why is not clear. Perhaps the smokers were more likely to drop out because of poor academic performance.

How the College First Came to the Student's Attention

It is intriguing to note that students at both two-year colleges and four-year colleges and universities were less likely to drop out if they indicated that the college they entered was first suggested to them by a relative. Since in most cases the relative involved was probably one of the student's parents, the student's greater persistence may be the result of direct parental pressure to stay in college; more subtly, it may reflect a concern not to disappoint his parents.

Equally intriguing is the negative relationship between persistence and recommendation of the college by a professional college placement service. The most likely explanation rests with the types of colleges typically recommended by such services: namely, institutions that are relatively unselective. It has been found (Astin, 1971) that low selectivity tends to be related to dropping out of college.

Institutional Effects on Student Persistence

In order to determine the effects of individual institu-

tions on their students' persistence, each institution's actual dropout rate was compared with its "expected" rate as calculated from the characteristics of its freshmen at the time of matriculation. The expected rate was computed in the following manner. The predictive equation for each measure of persistence (described in the previous section and in the Appendix) was applied to the freshman or precollege data for each student, yielding an expected probability of his persisting or dropping out (usually between 0.0 and 1.0). The probability estimates for all students at a given college were then averaged to yield a mean expected persistence rate for the college. This expected rate was then compared with the actual rate to determine if the college's retention rate was less than, greater than, or equal to what was to be expected from the types of freshmen it enrolled. Note that the expected rate (based on national freshman data) assumes that a given college's students will be similar in their persistence patterns to similar types of students. Thus, if a college's students conform to the national pattern, its actual retention rate will be equal or very close to its expected retention rate. This is not to say that the college does not exert any influence on the student's tendency to persist or drop out but simply that its influence is like that of the typical college.

Four-Year Colleges and Universities

Table 15 shows the range of three mean scores for four-year colleges and universities: (1) actual score, (2) expected

Table 15

Mean Scores for Four-Year Colleges and Universities on Four Measures of Persistence

Institutional Mean Scores for:	Returned for a Second Year	Received the Bachelor's Degree	Received a Degree, or Still Enrolled	Received a Degree, Still Enrolled, or Requested Transcript
Men:				
Highest Actual Mean	99.3	88.1	94.1	99.5
Lowest Actual Mean	54.3	18.3	31.2	50.5
Highest Expected* Mean	95.2	74.9	84.7	99.9
Lowest Expected* Mean	65.2	30.2	45.8	70.9
Highest Actual Minus Expected Mean	+18.9	+22.7	+16.3	+12.8
Lowest Actual Minus Expected Mean	-19.9	-29.5	-22.6	-27.4
Women:				
Highest Actual Mean	100.0	87.1	87.1	100.0
Lowest Actual Mean	56.8	22.1	27.9	42.5
Highest Expected* Mean	90.8	69.5	72.9	94.9
Lowest Expected* Mean	66.6	32.4	37.4	69.4
Highest Actual Minus Expected Mean	+22.2	+47.1	+47.1	+19.6
Lowest Actual Minus Expected Mean	-15.2	-32.5	-22.0	-33.4
All students:				
Highest Actual Mean	99.6	88.1	94.1	100.0
Lowest Actual Mean	58.3	23.0	33.8	48.2
Highest Expected* Mean	95.2	74.9	84.7	99.9
Lowest Expected* Mean	66.1	32.0	41.2	71.3
Highest Actual Minus Expected Mean	+22.2	+25.4	+22.8	+19.6
Lowest Actual Minus Expected Mean	-19.9	-24.2	-21.3	-29.7

*Based on student input data.

score, and (3) actual minus expected score. Clearly, colleges differed greatly from one another in both their expected and their actual dropout rates. Data for the first measure of persistence, for example, show that there were some colleges where virtually every student returned for a second year, and at least one college where nearly half the students failed to return for a second year. Institutions differed even more widely on the three other measures of persistence. On the second measure (received the bachelor's degree), for example, the highest institution had an actual persistence rate (88 percent) that was nearly four times as great as the actual rate of the lowest institution (23 percent).

Variations in expected persistence rates were somewhat smaller than variations in actual rates, a finding which is understandable in that our predictions of persistence for individual students were far from perfect. Variations in the actual minus expected rate ranged from -30 percent to +25 percent. The range for women students (-33 percent to +47 percent) was somewhat larger than the range for men (-29.5 percent to 23 percent

Two-Year Colleges

Variations in the actual, the estimated, and the actual minus estimated mean scores for two-year colleges are shown in Table 16. The variations in actual persistence rates were somewhat smaller than those for four-year colleges and universities, although still quite large. Thus, on the second and third

[5]Each of the 217 participating institutions was sent a report showing its actual, estimated, and actual minus estimated persistence rates separately for men, women, and all students. See the Appendix for a sample of one of these reports.

Table 16

Mean Scores for Two-Year Colleges on Four Measures of Persistence

Institutional Mean Scores for:	Returned for a Second Year	Received the Associate's Degree	Received a Degree, or Still Enrolled	Received a Degree, Still Enrolled, or Requested Transcript
Men:				
Highest Actual Mean	77.5	66.2	70.4	83.6
Lowest Actual Mean	50.2	14.5	17.1	50.9
Highest Expected* Mean	68.6	44.8	47.2	76.3
Lowest Expected* Mean	60.5	30.5	33.6	59.9
Highest Actual Minus Expected Mean	+ 9.7	+24.4	+25.2	+10.1
Lowest Actual Minus Expected Mean	-16.0	-22.8	-23.4	-10.7
Women:				
Highest Actual Mean	81.8	68.2	68.2	90.3
Lowest Actual Mean	33.1	23.4	26.3	46.7
Highest Expected* Mean	69.4	50.0	51.6	76.4
Lowest Expected* Mean	58.9	33.2	34.7	58.0
Highest Actual Minus Expected Mean	+15.0	+18.8	+17.0	+13.9
Lowest Actual Minus Expected Mean	-27.2	-15.2	-17.3	-14.1
All students:				
Highest Actual Mean	78.4	67.6	78.4	90.3
Lowest Actual Mean	46.7	23.4	46.7	49.3
Highest Expected* Mean	68.7	46.6	68.7	76.4
Lowest Expected* Mean	59.8	32.7	59.8	60.1
Highest Actual Minus Expected Mean	+10.7	+25.6	+10.7	+13.9
Lowest Actual Minus Expected Mean	-17.4	-13.9	-17.4	-11.0

*Based on student input data.

measures, the highest actual mean is nearly three times as large as the lowest actual mean.

Variations in expected means were considerably smaller than was the case with four-year colleges and universities, especially on the first measure of persistence (returned for a second year). This difference probably results from two factors: the greater similarity of students entering two-year colleges and our relative inability to predict accurately the persistence of students at two-year colleges.

Two-Year Colleges Versus Four-Year Colleges and Universities

How did the dropout rates of two-year colleges compare with those of four-year colleges and universities? Since two-year colleges tended to recruit students with rather poor grades in high school and low test scores, it is not surprising that their dropout rates were relatively high. But only if we compare the rates against the standard used for four-year colleges and universities can we judge whether the dropout rates at two-year colleges are higher than they should be. To explore this question, therefore, we used the one measure of persistence that was comparable for the two groups of institutions: returned for a second year. The formula developed to predict this outcome at four-year colleges and universities was applied to the input data for students entering two-year colleges. The mean expected rates were then compared with the mean actual rates at each of the 23 two-year institutions in our sample. The expected mean

exceeded the actual mean at 14 institutions, whereas the actual mean exceeded the expected mean at only 9 institutions. In short, two-year colleges did, indeed, seem less successful than did four-year colleges and universities in retaining their students.

As another approach to comparing the dropout rates of these two groups of institutions, we reversed the procedure described above, computing expected persistence rates for students at each of the 194 four-year colleges and universities in our sample on the basis of the formula developed for students at two-year colleges. This procedure produced an even more dramatic result: Actual persistence rates exceeded expected rates at 151 institutions, whereas expected rates exceeded actual rates at only 38 institutions. (The expected and actual rates were identical at the other four institutions.) Thus, when compared with the standard developed at two-year colleges, the persistence rates of students at four-year colleges and universities tended to be substantially higher.

In short, a given student had a somewhat better chance of returning for a second undergraduate year if he attended a four-year college or university than if he attended a two-year college. At the same time, there are probably many exceptions to this general rule, since about 20 percent of the four-year colleges and universities and 40 percent of the two-year colleges showed the opposite pattern.

Summary

The principal purpose of this study was to determine national dropout rates for two groups of institutions: (1) two-year colleges, and (2) four-year colleges and universities. Data were collected through the Cooperative Institutional Research Program of the American Council on Education and involved a four-year followup of the class of 1970. The principal findings can be summarized as follows:

1. National dropout rates seem to be somewhat lower than has been suggested in other recent reports. Even by the most severe measure of persistence (completing a baccalaureate degree within four years at the college of matriculation), nearly half of all students entering four-year colleges and universities can be classified as nondropouts. If students still enrolled for work toward a degree at their first institution are also regarded as nondropouts, the persistence rate is nearly 60 percent for students at four-year colleges and universities. Of those students who are neither degree recipients nor still enrolled at their first institution, nearly half requested that transcripts be sent to another institution--an indication that they may be enrolled and working toward a degree elsewhere.

2. Dropout rates at two-year colleges are somewhat higher than those at four-year colleges and universities. Although these higher rates are primarily attributable to the lower level of motivation and poorer academic preparation of students entering these colleges, the retention rates of the two-year colleges

are still somewhat lower than would be expected.

3. The principal predictors of persistence are the student's grades in high school and his scores on tests of academic ability. Other important predictors include being a man and a nonsmoker; having high degree aspirations at the time of college entrance; financing one's college education chiefly through aid from parents, scholarship, or personal savings; and not being employed during the school year.

4. Using these predictors of the student's persistence in a multiple regression equation, it is possible to compute an "expected" persistence rate for individual colleges. While the actual persistence rates are fairly close to these expected rates at the typical college, there are many exceptions. At a given college, the actual rate may exceed the expected rate by as much as 40 percent or fall below it by as much as 25 percent. Studies currently in progress at the American Council on Education are designed to determine the particular institutional characteristics that account for these discrepancies between expected and actual persistence rates at individual colleges.

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APPENDIX

Table A1

Persistence Rates by Institutional Stratification Cell
(Weighted Percentages)

Stratification Cell	Weighted N	Returned for a Second Year	Received Degree*	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled or Requested Transcript
Universities					
Selectivity below 500 or unknown	108,058	73.7	33.0	51.1	71.8
Selectivity 500-549	112,332	75.9	42.2	58.0	83.0
Selectivity 550-599	109,383	81.1	50.5	63.2	83.9
Selectivity 600 or more	87,991	86.4	58.8	69.9	85.5
Public four-year colleges					
Selectivity below 450 or unknown	122,772	73.6	42.9	51.6	76.0
Selectivity 450-499	77,315	73.7	36.5	51.5	71.8
Selectivity 500 or more	82,534	86.6	56.2	72.7	84.6
Private nonsectarian four-year colleges					
Selectivity below 500 or unknown	68,858	77.2	48.1	56.1	79.9
Selectivity 500-574	15,292	78.8	56.0	57.8	90.5
Selectivity 575-649	18,204	86.3	65.2	71.9	92.5
Selectivity 650 or more	14,216	94.1	76.1	80.4	96.6
Roman Catholic four-year colleges					
Selectivity below 500 or unknown	21,981	68.3	38.8	45.1	84.3
Selectivity 500-574	25,125	80.0	50.8	55.6	90.3
Selectivity 575 or more	13,190	82.3	58.8	63.8	91.7
Other sectarian four-year colleges					
Selectivity below 450 or unknown	24,507	64.3	39.4	43.1	77.9
Selectivity 450-499	18,364	77.3	52.5	55.5	87.0
Selectivity 500-574	23,476	74.3	46.0	50.1	86.5
Selectivity 575 or more	16,974	82.8	59.8	64.7	91.1
Two-year colleges					
Selectivity below 400	90,440	66.7	36.4	37.2	61.4
Selectivity 400 or more	173,444	64.9	33.8	37.5	62.3
Expenditures below $1,000/student	181,315	66.2	37.0	38.3	66.2
Expenditures $1,000/ student or more	90,654	67.0	52.2	53.8	76.7
Predominantly black col.	41,808	76.0	41.7	57.3	70.4

*Baccalaureate degree for four-year colleges and universities; associate's degree for two-year colleges.

Note: Mean and standard deviation on selectivity for institutional population are 500 and 100, respectively.

Table A2

Progress of Dropouts as Reported in Followup Questionnaire Completed During the Summer of 1970

Dropout Measure	Number Returning Questionnaire	Attended a Second College	Percentage Reporting: Highest Degree Held* None	Associate's	Bachelor's (or higher)	Highest Degree Planned* None	Associate's	Bachelor's	Graduate
Four-year colleges and universities:									
No degree	8,558	58.2	61.1	8.0	29.8	9.1	2.2	34.1	52.7
No degree, not still enrolled	6,631	70.0	56.8	9.0	32.9	11.1	2.8	33.1	50.7
No degree, not still enrolled, no transcript requested	1,418	37.3	76.2	8.3	13.2	22.5	5.8	39.1	29.4
Two-year colleges:									
No degree	1,104	49.8	67.0	17.1	14.3	17.3	10.5	36.3	33.5
No degree, not still enrolled	1,036	51.5	67.3	16.0	15.2	18.4	10.3	35.7	33.2
No degree, not still enrolled, no transcript requested	459	23.7	86.9	9.0	2.2	32.1	16.7	30.9	16.7

*Percentages sum to slightly less than 100 because respondents who checked "other" degree are not shown.

Table B1

Returned for a Second Year:
Summary of Stepwise Regression
(9,084 Students in Four-Year Colleges and Universities)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 5 (R=.215)	Beta Weight After Step No. 39 (R=.275)
Academic ability test score	.16	.09	.08
High school grades	.16	.09	.07
Chances of marrying while in college	-.10	-.07	-.07
Smoked cigarettes	-.10	-.07	-.06
Employed while attending college	-.06	-.05	-.04

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .006) are shown.

Table B2

Obtained the Bachelor's Degree:
Summary of Stepwise Regression
(9,084 Students in Four-Year Colleges and Universities)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 10 (R=.309)	Beta Weight After Step No. 39 (R=.340)
High school grades	.22	.12	.11
Academic ability test score	.19	.12	.11
Career choice: engineer	-.07	-.08	-.10
Chances of marrying while in college	-.12	-.08	-.08
Turned in a paper or theme late	-.09	-.07	-.06
Religious preference "none"	-.04	-.06	-.06
Employed while attending college	-.08	-.06	-.05
Major in history or political science	.09	.06	.05
Smoked cigarettes	-.10	-.06	-.05
Planning graduate study	.05	.05	.04

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .006) are shown.

Table B3

Obtained the Bachelor's Degree or Still Enrolled:
Summary of Stepwise Regression
(9,084 Students in Four-Year Colleges and Universities)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 9 (R=.285)	Beta Weight After Step No. 44 (R=.327)
High school grades	.18	.13	.11
Academic ability test score	.18	-.10	.11
Female	-.08	-.10	-.09
Chances of marrying while in college	-.13	-.08	-.07
Smoked cigarettes	-.11	-.07	-.05
Employed while attending college	-.07	-.06	-.05
Turned in a paper or theme late	-.07	-.05	-.04
Religious preference "none"	-.03	-.05	-.04
Major in history or political science	.07	.05	.03

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .006) are shown.

Table B4

Obtained the Bachelor's Degree, Still Enrolled, or Requested Transcript: Summary of Stepwise Regression
(9,084 Students in Four-Year Colleges and Universities)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 8 (R=.254)	Beta Weight After Step No. 43 (R=.310)
Academic ability test score	.19	.10	.08
Age	-.12	-.07	-.07
High school grades	.16	.07	.07
Level of degree aspiration	.12	.06	.09
Parental aid major source of support	.09	.06	.05
Chances of marrying while in college	-.10	.06	.05
Won a varsity letter in high school	.05	.06	.03
Smoked cigarettes	-.07	.05	.05

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .006) are shown.

Table B5

Returned for a Second Year:
Summary of Stepwise Regression
(6,287 Students in Two-Year Colleges)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 3 (R=.130)	Beta Weight After Step No. 19 (R=.194)
Smoked cigarettes	-.09	-.09	-.07
Employed during the school year	-.07	-.07	-.07
Level of degree aspiration	.06	.06	.08

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .015) are shown.

Table B6

Obtained the Associate's Degree
Summary of Stepwise Regression
(6,287 Students in Two-Year Colleges)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 5 (R=.197)	Beta Weight After Step No. 20 (R=.238)
High school grades	.15	.13	.11
Employed during the school year	-.09	-.08	-.07
Religious preference Protestant	.08	.06	.06
Turned in a paper or theme late	-.08	-.05	-.05
Smoked cigarettes	-.08	-.05	-.05

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .015) are shown.

Table B7

Obtained the Associate's Degree or Still Enrolled:
Summary of Stepwise Regression
(6,287 Students in Two-Year Colleges)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 5 (R=.177)	Beta Weight After Step No. 20 (R=.226)
High school grades	.14	.12	.10
Employed during the school year	-.08	-.07	-.07
Religious preference Protestant	.07	.05	.07
Turned in a paper or theme late	-.07	-.05	-.05
Relative was important factor in choosing this college	.06	.05	.05

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .015) are shown.

Table B8

Obtained the Associate's Degree, Still Enrolled, or Requested Transcript
Summary of Stepwise Regression
(6,287 Students in Two-Year Colleges)

Predictor Variable	Zero-Order r	Beta Weight After Step No. 8 (R=.261)	Beta Weight After Step No. 31 (R=.309)
Level of degree aspiration	.15	.12	.10
Worked during the school year	-.12	.10	.10
High school grades	.14	.09	.08
Smoked cigarettes	-.09	-.07	-.07
Parental aid major source of support	.10	.06	.07
Drive to achieve (self-rating)	.10	.06	.05
Race--white	.07	.06	.04
Major in history or political science	.06	.05	.04

Note: Only variables that entered the regression equation with an F ratio of at least 25.0 (increase in R of about .015) are shown.

Table B9

F Ratios* Associated with Final Regression Weights

Predictor Variable	Number in Regression Analysis	Four-Year Colleges and Universities: Returned for a Second Year	Received the Bachelor's Degree	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled or Requested Transcript	Two-Year Colleges: Returned for a Second Year	Received the Associate's Degree	Received Degree or Was Still Enrolled	Received Degree, Was Still Enrolled or Requested Transcript
Sex (female)	2			-50	-30				-25
High school grades	3	29	81	71	34		63	52	32
Participated in state/regional speech/debate contest	6	- 5							
Had major part in high school play	7	- 5		- 5	-20	- 6			
Won varsity letter	8		15	9	12				
Edited school paper/yearbook/ literary magazine	10				6				
Had poem/story/essay/article published	11				- 5				
Placed in state/regional science contest	13						5	4	
Won Certificate of Merit/ Letter of Commendation NMP	15					- 8			
Concern about financing college	16	- 9	- 9	- 7					
Received major support from employment during college	17	-13	-26	-24	- 9	-30	-27	-27	-59
Received major support from scholarship	19	13	4	7	8				4
Received major support from G.I. Bill	20					10	12	11	
Received major support from personal savings	21	11	12	11		9		5	12
Received major support from parental aid	23	15	9	10	23		11	7	28
Received major support from Federal government	24	4					7	7	12
Received major support from commercial loan	25	- 5							
Father's education	26								13
Mother's education	27				4				
Parental income	28				9		- 8	- 5	
Came late to class	29			- 8					
Smoked cigarettes	30	-37	-21	-26	-20	-33	-19	-14	-28
Overslept and missed class or appointment	31		- 8	- 5					
Cribbed on an exam	32				7		5		
Turned in paper or theme late	33	- 7	-30	-12	-11	- 9	-20	-13	-18
Becoming accomplished in performing arts	34				6				
Becoming expert in commerce and finance	38	6	5						
Having administrative responsibilities	39	10	5	4					
Helping others in difficulty	41	- 7	- 6	-11					
Becoming community leader	44			4					
Never being obligated to people	47	- 5							
Creating artistic works	48	-17	-10						
Being successful in own business	50		- 6						
Academic ability	51						6	6	4
Athletic ability	52								6
Cheerfulness	54			4	4				
Defensiveness	55				-15				
Drive to achieve	56		9	7	11				14
Mechanical ability	59								-11
Political conservatism	61				8				6
Popularity with the opposite sex	64					-14			-15
Public speaking ability	65								5
Self-confidence (intellectual)	66					11			
Self-confidence (social)	67		- 5	- 8	-14		- 6	- 8	
Sensitivity to criticism	68	4	4		7				
Stubbornness	69		-13		- 4				
Age	72	- 8		- 4	-42	-22			
Married in college	73	-37	-58	-45	-28	- 4	- 9	- 6	
Married year after college	74	6	12		8				10
Level of aspiration (1=degree; 2=A.A.; 3=B.A.; 4=Ph.D. or Professional)	75	31		35	36	18			56
Ph.D. or Ed.D.	76	-12		-22	-18				
Professional degree	77	-14		-24	-24				-11
Graduate plans	78		13			- 4			
White	79								13
Negro	80	9		11			- 8	- 6	
Reared Protestant	82		-12	- 9					

Table B9 (Continued)

Predictor Variable	Number in Regression Analysis	Four-Year Colleges and Universities: Returned for a Second Year	Four-Year Colleges and Universities: Received the Bachelor's Degree	Four-Year Colleges and Universities: Received Degree or Was Still Enrolled	Four-Year Colleges and Universities: Received Degree, Was Still Enrolled or Requested Transcript	Two-Year Colleges: Returned for a Second Year	Two-Year Colleges: Received the Associate's Degree	Two-Year Colleges: Received Degree or Was Still Enrolled	Two-Year Colleges: Received Degree, Was Still Enrolled or Requested Transcript
Presently Protestant	83					15	24	21	
Reared Catholic	84					11		4	
Reared Jewish	86	5			5				
Presently None	89	- 9	-29	-18	- 6				
First choice of major--biological sciences	91		- 5						
First choice of major--business	92	-13	- 6		-15				
First choice of major--health profession	96		-16						
First choice of major--history/political science	97	5	23	11		8			13
First choice of major--mathematics/statistics	100				-14				
First choice of major--social science	103								11
First choice of major--other fields (technical)	104	8	6	6	- 7				
First choice of major--other fields (non-technical)	105			- 4	-30				4
First choice of major--undecided	106								9
First choice of career--businessman	108				7				
First choice of career--doctor	111								7
First choice of career--educator (secondary)	112			10					
First choice of career--elementary teacher	113			15			6	5	6
First choice of career--engineer	114	- 7	-83	-10	-13		9	9	
First choice of career--lawyer	117		4	6	8				
First choice of career--nurse	118	- 7		- 6	-26	- 7			
First choice of career--researcher	119					12			
First choice of career--other	120		-10						- 5
Public high school	125	- 8							
Private (denominational) high school	126				12	- 4			
Private (non-denominational) high school	127						11	8	6
Indian race	129	- 4			6				
Other race	130	- 7							
Relative	131	13	12	10	9		13	16	
High school counselor/teacher	133								-13
Professor in counseling/placement service	134	- 6	- 4	-17					
This college or representative of this college	135				10		5	5	
Other	136								- 7
Cannot recall	137	5							
NMS composite	142	40	78	72	43				

... *Rounded to the nearest whole number.

Note: Only variables that entered at least one of the eight regressions are shown.

STUDENT INFORMATION FORM

273200

YOUR NAME(please print)_____
First Middle or Malden Last

HOME STREET ADDRESS_____

_____
CITY STATE ZIP CODE (if known)

Note: The information in this report is being collected through the American Council on Education as part of a study of this year's entering class. Please complete all items. Your name and address has been requested in order to facilitate mail follow-up studies. Your responses will be used only in group summaries for research purposes, and will not be identified with you individually.

Social Security Number (if known)

If you recently took any of the national achievement tests and happen to remember your score, fill in the appropriate information:

SAT Verbal Score

ACT Composite Score

Date of Birth _____ Month _____ Day _____ Year

SAT Math

NMSC Selection Score

DIRECTIONS: Your responses will be read by an automatic scanning device. Your careful observance of these few simple rules will be most appreciated.

Use only black lead pencil (No. 2½ or softer).
Make heavy black marks that fill the circle.
Erase cleanly any answer you wish to change.
Make no stray markings of any kind.

Example: Will marks made with ball pen or fountain pen be properly read? Yes ○ No ●

1. Your Sex: Male ○ Female ○

2. From what kind of secondary school did you graduate? (Mark one)
- Public ○
- Private (denominational) ○
- Private (nondenominational) ○
- Other ○

3. What was your average grade in secondary school? (Mark one)
- A or A+ ○
- A– ○
- B+ ○
- B ○
- B– ○
- C+ ○
- C ○
- D ○

4. What is the highest academic degree that you intend to obtain? (Mark one)
- None ○
- Associate (or equivalent) ○
- Bachelor's degree (B.A., B.S., etc.) ○
- Master's degree (M.A., M.S., etc.) ○
- Ph.D. or Ed.D ○
- M.D., D.D.S., or D.V.M. ○
- LL.B. or J.D ○
- B.D. ○
- Other ○

5. The following questions deal with accomplishments that might possibly apply to your high school years. Do not be discouraged by this list; it covers many areas of interest and few students will be able to say "yes" to many items. (Mark all that apply)
- Was elected president of one or more student organizations (recognized by the school) ○
- Received a high rating (Good, Excellent) in a state or regional music contest ○
- Participated in a state or regional speech or debate contest ○
- Had a major part in a play ○
- Won a varsity letter (sports) ○
- Won a prize or award in an art competition ○
- Edited the school paper, yearbook, or literary magazine ○
- Had poems, stories, essays, or articles published ○
- Participated in a National Science Foundation summer program ○
- Placed (first, second, or third) in a state or regional science contest ○
- Was a member of a scholastic honor society ○
- Won a Certificate of Merit or Letter of Commendation in the National Merit Program ○

6. Do you have any concern about your ability to finance your college education? (Mark one)

- None (I am confident that I will have sufficient funds) ○
- Some concern (but I will probably have enough funds) ○
- Major concern (not sure I will be able to complete college) ○

7. Through what source do you intend to finance the first year of your undergraduate education? (Mark one for each item)

	Major Source	Minor Source	Not a Source
Employment during college	○	○	○
Employment during summer	○	○	○
Scholarship	○	○	○
G. I. Bill	○	○	○
Personal savings	○	○	○
Tuition deferment loan from college	○	○	○
Parental aid	○	○	○
Federal government	○	○	○
Commercial loan	○	○	○

8. What is your racial background? (Mark one)

- Caucasian ○
- Negro ○
- American Indian ○
- Oriental ○
- Other ○

9. What is the highest level of formal education obtained by your parents? (Mark one in each column)

	Father	Mother
Grammar school or less	○	○
Some high school	○	○
High school graduate	○	○
Some college	○	○
College degree	○	○
Postgraduate degree	○	○

10. What is your best estimate of the total income last year of your parental family (not your own family if you are married)? Consider annual income from all sources before taxes.

- Less than $4,000 ○
- $4,000–$5,999 ○
- $6,000–$7,999 ○
- $8,000–$9,999 ○
- $10,000–$14,999 ○
- $15,000–$19,999 ○
- $20,000–$24,999 ○
- $25,000–$29,999 ○
- $30,000 or more ○

11. Mark one in each column below:

	Religion in Which You Were Reared	Your Present Religious Preference
Protestant	○	○
Roman Catholic	○	○
Jewish	○	○
Other	○	○
None	○	○

12. In deciding where to go to college, through what source did this college first come to your attention? (Mark one)

- Relative ○
- Friend ○
- High school counselor or teacher ○
- Professional counseling or college placement service ○
- This college or a representative from this college ○
- Other source ○
- I cannot recall ○

13. To what extent do you think each of the following describes the psychological climate or atmosphere at this college? (Mark one answer for each item)

	Very Descriptive	In Between	Not at all Descriptive
Intellectual	○	○	○
Snobbish	○	○	○
Social	○	○	○
Victorian	○	○	○
Practical-minded	○	○	○
Warm	○	○	○
Realistic	○	○	○
Liberal	○	○	○

14. Answer each of the following as you think it applies to this college:

	Yes	No
The students are under a great deal of pressure to get high grades	○	○
The student body is apathetic and has little "school spirit"	○	○
Most of the students are of a very high calibre academically	○	○
There is a keen competition among most of the students for high grades	○	○
Freshmen have to take orders from upperclassmen for a period of time	○	○
There isn't much to do except to go to class and study	○	○
I felt "lost" when I first came to the campus	○	○
Being in this college builds poise and maturity	○	○
Athletics are overemphasized	○	○
The classes are usually run in a very informal manner	○	○
Most students are more like "numbers in a book"	○	○

15. Are you:

- An only child (Mark and skip to number 20) ○
- The first-born (but not an only child) ○
- The second-born ○
- The third-born ○
- Fourth (or later) born ○

16. How many brothers and sisters now living do you have? (Mark one)

- None (Mark and skip to number 20) ○

1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 or more ○

17. Mark one circle for each of your brothers and sisters between the ages of 13 and 23

	13	14	15	16	17	18	19	20	21	22	23
Brothers	○	○	○	○	○	○	○	○	○	○	○
Sisters	○	○	○	○	○	○	○	○	○	○	○

18. Are you a twin? (Mark one)

- No, (Mark and skip to number 20) ○
- Yes, identical ○
- Yes, fraternal same sex ○
- Yes, fraternal opposite sex ○

19. Is your twin attending college?

- No ○
- Yes, the same college ○
- Yes, a different college ○

20. Mark one in each column:

	Your current home state	Your birthplace	Your father's birthplace	Your mother's birthplace
Alabama	○	○	○	○
Alaska	○	○	○	○
Arizona	○	○	○	○
Arkansas	○	○	○	○
California	○	○	○	○
Colorado	○	○	○	○
Connecticut	○	○	○	○
Delaware	○	○	○	○
D. C.	○	○	○	○
Florida	○	○	○	○
Georgia	○	○	○	○
Hawaii	○	○	○	○
Idaho	○	○	○	○
Illinois	○	○	○	○
Indiana	○	○	○	○
Iowa	○	○	○	○
Kansas	○	○	○	○
Kentucky	○	○	○	○
Louisiana	○	○	○	○
Maine	○	○	○	○
Maryland	○	○	○	○
Massachusetts	○	○	○	○
Michigan	○	○	○	○
Minnesota	○	○	○	○
Mississippi	○	○	○	○
Missouri	○	○	○	○
Montana	○	○	○	○
Nebraska	○	○	○	○
Nevada	○	○	○	○
New Hampshire	○	○	○	○
New Jersey	○	○	○	○
New Mexico	○	○	○	○
New York	○	○	○	○
North Carolina	○	○	○	○
North Dakota	○	○	○	○
Ohio	○	○	○	○
Oklahoma	○	○	○	○
Oregon	○	○	○	○
Pennsylvania	○	○	○	○
Rhode Island	○	○	○	○
South Carolina	○	○	○	○
South Dakota	○	○	○	○
Tennessee	○	○	○	○
Texas	○	○	○	○
Utah	○	○	○	○
Vermont	○	○	○	○
Virginia	○	○	○	○
Washington	○	○	○	○
West Virginia	○	○	○	○
Wisconsin	○	○	○	○
Wyoming	○	○	○	○
Latin America	○	○	○	○
Europe	○	○	○	○
Africa	○	○	○	○
Asia	○	○	○	○
Other	○	○	○	○

21. Below is a list of 66 different undergraduate major fields grouped into general categories. Mark only three of the 66 fields as follows:

① First choice (your probable major field of study).
② Second choice.
Ⓛ The field of study which is least appealing to you.

Arts and Humanities

Architecture	①	②	Ⓛ
English (literature)	①	②	Ⓛ
Fine arts	①	②	Ⓛ
History	①	②	Ⓛ
Journalism (writing)	①	②	Ⓛ
Language (modern)	①	②	Ⓛ
Language (other)	①	②	Ⓛ
Music	①	②	Ⓛ
Philosophy	①	②	Ⓛ
Speech and drama	①	②	Ⓛ
Theology	①	②	Ⓛ
Other	①	②	Ⓛ

Biological Science

Biology (general)	①	②	Ⓛ
Biochemistry	①	②	Ⓛ
Biophysics	①	②	Ⓛ
Botany	①	②	Ⓛ
Zoology	①	②	Ⓛ
Other	①	②	Ⓛ

Business

Accounting	①	②	Ⓛ
Business admin.	①	②	Ⓛ
Electronic data processing	①	②	Ⓛ
Secretarial studies	①	②	Ⓛ
Other	①	②	Ⓛ

Engineering

Aeronautical	①	②	Ⓛ
Civil	①	②	Ⓛ
Chemical	①	②	Ⓛ
Electrical	①	②	Ⓛ
Industrial	①	②	Ⓛ
Mechanical	①	②	Ⓛ
Other	①	②	Ⓛ

Physical Science

Chemistry	①	②	Ⓛ
Earth science	①	②	Ⓛ
Mathematics	①	②	Ⓛ
Physics	①	②	Ⓛ
Statistics	①	②	Ⓛ
Other	①	②	Ⓛ

Professional

Health Technology (medical, dental, laboratory)	①	②	Ⓛ
Nursing	①	②	Ⓛ
Pharmacy	①	②	Ⓛ
Predentistry	①	②	Ⓛ
Prelaw	①	②	Ⓛ
Premedical	①	②	Ⓛ
Preveterinary	①	②	Ⓛ
Therapy (occupat., physical, speech)	①	②	Ⓛ
Other	①	②	Ⓛ

Social Science

Anthropology	①	②	Ⓛ
Economics	①	②	Ⓛ
Education	①	②	Ⓛ
History	①	②	Ⓛ
Political science (government, int. relations)	①	②	Ⓛ
Psychology	①	②	Ⓛ
Social work	①	②	Ⓛ
Sociology	①	②	Ⓛ
Other	①	②	Ⓛ

Other Fields

Agriculture	①	②	Ⓛ
Communications (radio, T. V., etc.)	①	②	Ⓛ
Electronics (technology)	①	②	Ⓛ
Forestry	①	②	Ⓛ
Home economics	①	②	Ⓛ
Industrial arts	①	②	Ⓛ
Library science	①	②	Ⓛ
Military science	①	②	Ⓛ
Physical education and recreation	①	②	Ⓛ
Other (technical)	①	②	Ⓛ
Other (nontechnical)	①	②	Ⓛ
Undecided	①	②	Ⓛ

Please be sure that only three circles have been marked in the above list.

22. Probable Career Occupation

Note: Make only three responses, one in each column
① First Choice
② Second Choice
Ⓛ Least Appealing

Accountant or actuary	①	②	Ⓛ
Actor or entertainer	①	②	Ⓛ
Architect	①	②	Ⓛ
Artist	①	②	Ⓛ
Business (clerical)	①	②	Ⓛ
Business executive (management, administrator)	①	②	Ⓛ
Business owner or proprietor	①	②	Ⓛ
Business salesman or buyer	①	②	Ⓛ
Clergyman (minister, priest)	①	②	Ⓛ
Clergy (other religious)	①	②	Ⓛ
Clinical psychologist	①	②	Ⓛ
College teacher	①	②	Ⓛ
Computer programmer	①	②	Ⓛ
Conservationist or forester	①	②	Ⓛ
Dentist (including orthodontist)	①	②	Ⓛ
Dietitian or home economist	①	②	Ⓛ
Engineer	①	②	Ⓛ
Farmer or rancher	①	②	Ⓛ
Foreign service worker (including diplomat)	①	②	Ⓛ
Housewife	①	②	Ⓛ
Interior decorator (including designer)	①	②	Ⓛ
Interpretor (translator)	①	②	Ⓛ
Lab technician or hygienist	①	②	Ⓛ
Law enforcement officer	①	②	Ⓛ
Lawyer (attorney)	①	②	Ⓛ
Military service (career)	①	②	Ⓛ
Musician (performer, composer)	①	②	Ⓛ
Nurse	①	②	Ⓛ
Optometrist	①	②	Ⓛ
Pharmacist	①	②	Ⓛ
Physician	①	②	Ⓛ
School counselor	①	②	Ⓛ
School principal or superintendant	①	②	Ⓛ
Scientific researcher	①	②	Ⓛ
Social worker	①	②	Ⓛ
Statistician	①	②	Ⓛ
Therapist (physical, occupational, speech)	①	②	Ⓛ
Teacher (elementary)	①	②	Ⓛ
Teacher (secondary)	①	②	Ⓛ
Veterinarian	①	②	Ⓛ
Writer or journalist	①	②	Ⓛ
Skilled trades	①	②	Ⓛ
Other	①	②	Ⓛ
Undecided	①	②	Ⓛ

23. Below is a general list of things that students sometimes do. Indicate which of these things you did during the past year in school. If you engaged in an activity frequently, Mark "f." If you engaged in an activity one or more times, but not frequently, Mark "o"(occasionally). Mark "n"(not at all) if you have not performed the activity during the past year.
(Mark one for each item)

	Frequently	Occasionally	Not at all
Voted in a student election	F	O	N
Came late to class	F	O	N
Listened to New Orlean's (Dixieland) jazz	F	O	N
Gambled with cards or dice	F	O	N
Played a musical instrument	F	O	N
Took a nap or rest during the day	F	O	N
Drove a car	F	O	N
Stayed up all night	F	O	N
Studied in the library	F	O	N
Attended a ballet performance	F	O	N
Participated on the speech or debate team	F	O	N
Acted in plays	F	O	N
Sang in a choir or glee club	F	O	N
Argued with other students	F	O	N
Called a teacher by his or her first name	F	O	N
Wrote an article for the school paper or literary magazine	F	O	N
Had a blind date	F	O	N
Wrote a short story or poem (not for a class)	F	O	N
Played in a school band	F	O	N
Played in a school orchestra	F	O	N
Smoked cigarettes	F	O	N
Attended Sunday school	F	O	N
Checked out a book or journal from the school library	F	O	N
Went to the movies	F	O	N
Discussed how to make money with other students	F	O	N
Said grace before meals	F	O	N
Prayed (not including grace before meals)	F	O	N
Listened to folk music	F	O	N
Attended a public recital or concert	F	O	N
Made wisecracks in class	F	O	N
Arranged a date for another student	F	O	N
Went to an over-night or week-end party	F	O	N
Took weight-reducing or dietary formula	F	O	N
Drank beer	F	O	N
Overslept and missed a class or appointment	F	O	N
Typed a homework assignment	F	O	N
Participated in an informal group sing	F	O	N
Drank wine	F	O	N
Cribbed on an examination	F	O	N
Turned in a paper or theme late	F	O	N
Tried on clothes in a store without buying anything	F	O	N
Asked questions in class	F	O	N
Attended church	F	O	N
Participated in organized demonstrations	F	O	N

24. Indicate the importance to you personally of each of the following:
(Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	E	V	S	N
Becoming an authority on a special subject in my subject field	E	V	S	N
Obtaining recognition from my colleagues for contributions in my special field	E	V	S	N
Becoming an accomplished musician (performer or composer)	E	V	S	N
Becoming an expert in finance and commerce	E	V	S	N
Having administrative responsibility for the work of others	E	V	S	N
Being very well-off financially	E	V	S	N
Helping others who are in difficulty	E	V	S	N
Participating in an organization like the Peace Corps or Vista	E	V	S	N
Becoming an outstanding athlete	E	V	S	N
Becoming a community leader	E	V	S	N
Making a theoretical contribution to science	E	V	S	N
Writing original works (poems, novels, short stories, etc.)	E	V	S	N
Never being obligated to people	E	V	S	N
Creating artistic work (painting, sculpture, decorating, etc.)	E	V	S	N
Keeping up to date with political affairs	E	V	S	N
Being successful in a business of my own	E	V	S	N

25. Rate yourself on each of the following traits as you really think you are when compared with the average student of your own age. We want the most accurate estimate of how you see yourself. (Mark one for each item)

Trait	Highest 10 Percent	Above Average	Average	Below Average	Lowest Percent
Academic ability	O	O	O	O	O
Athletic ability	O	O	O	O	O
Artistic ability	O	O	O	O	O
Cheerfulness	O	O	O	O	O
Defensiveness	O	O	O	O	O
Drive to achieve	O	O	O	O	O
Leadership ability	O	O	O	O	O
Mathematical ability	O	O	O	O	O
Mechanical ability	O	O	O	O	O
Originality	O	O	O	O	O
Political conservatism	O	O	O	O	O
Political liberalism	O	O	O	O	O
Popularity	O	O	O	O	O
Popularity with the opposite sex	O	O	O	O	O
Public speaking ability	O	O	O	O	O
Self-confidence (intellectual)	O	O	O	O	O
Self-confidence (social)	O	O	O	O	O
Sensitivity to criticism	O	O	O	O	O
Stubbornness	O	O	O	O	O
Understanding of others	O	O	O	O	O
Writing ability	O	O	O	O	O

26. How old will you be on December 31 of this year?
(Mark one)

- 16 or younger
- 17
- 18
- 19
- 20
- 21
- Older than 21

27. (If you are married, omit the following question)
What is your best guess as to the chances that you will marry

	While in College?	Within a Year after College?
Very good chance	O	O
Some chance	O	O
Very little chance	O	O
No chance	O	O

Prepared by American Council on Education • 1785 Massachusetts Ave., N.W. Washington, D.C.

AMERICAN COUNCIL ON EDUCATION

COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM
FIRST REPORT ON FOUR-YEAR FOLLOW UP OF 1966 ENTERING FRESHMEN

NAME OF INSTITUTION

242

RETURNED FOR A SECOND UNDERGRADUATE YEAR

	MEN	WOMEN	ALL STUDENTS
NUMBER OF STUDENTS FOR WHOM FOLLOW UP DATA WERE PROVIDED	101	143	244
ACTUAL PERCENTAGE RETURNING FOR A SECOND YEAR	90.0	90.2	90.1
ESTIMATED PERCENTAGE FROM FRESHMAN DATA	81.0	82.6	81.9
DIFFERENCE BETWEEN ACTUAL AND ESTIMATED PERCENTAGES	+09.0	+07.6	+08.1

RECEIVED BACHELORS DEGREE

	MEN	WOMEN	ALL STUDENTS
NUMBER OF STUDENTS FOR WHOM FOLLOW UP DATA WERE PROVIDED	101	143	244
ACTUAL PERCENTAGE RECEIVING DEGREE	60.3	53.8	56.5
ESTIMATED PERCENTAGE FROM FRESHMAN DATA	53.7	55.4	54.7
DIFFERENCE BETWEEN ACTUAL AND ESTIMATED PERCENTAGES	+06.6	-01.6	+01.8

RECEIVED BACHELORS DEGREE OR STILL ENROLLED

	MEN	WOMEN	ALL STUDENTS
NUMBER OF STUDENTS FOR WHOM FOLLOW UP DATA WERE PROVIDED	101	143	244
ACTUAL PERCENTAGE RECEIVING DEGREE OR STILL ENROLLED	77.2	80.4	79.0
ESTIMATED PERCENTAGE FROM FRESHMAN DATA	58.9	69.2	65.0
DIFFERENCE BETWEEN ACTUAL AND ESTIMATED PERCENTAGES	+18.3	+11.1	+14.0

RECEIVED BACHELORS DEGREE, STILL ENROLLED, OR HAD A TRANSCRIPT SENT TO ANOTHER INSTITUTION

	MEN	WOMEN	ALL STUDENTS
NUMBER OF STUDENTS FOR WHOM FOLLOW UP DATA WERE PROVIDED	101	143	244
ACTUAL PERCENTAGE RECEIVING DEGREE, STILL ENROLLED, OR REQUESTING TRANSCRIPT	81.1	82.5	81.9
ESTIMATED PERCENTAGE FROM FRESHMAN DATA	84.8	89.1	87.3
DIFFERENCE BETWEEN ACTUAL AND ESTIMATED PERCENTAGES	-03.6	-06.6	-05.3

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(ACE)

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