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CHANGES IN GOALS, PLANS, AND BACKGROUND CHARACTERISTICS OF COLLEGE-BOUND HIGH SCHOOL STUDENTS

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ABSTRACT

This study provides information on the stability or change in personal and background characteristics of entering college students. Findings are consolidated and compared from three previously unpublished papers: a 2-year follow-up of high school seniors who continued their education, a similar 4-year follow-up, and a comparison of responses of two independent samples of high school seniors who took the ACT Assessment in 1966 and in 1969. Precollege data for all studies were obtained from the Student Profile Section of the ACT Assessment. Follow-up data were gathered by questionnaires. Variables analyzed in the present study dealt with students' academic and vocational goals, educational aspirations and expectations, need for financial aid, out-of-class achievements, employment patterns while in college, use of automobiles on campus, and participation in college-related activities.

Considerable differences in stability among characteristics were found; however, the changes seem to be orderly and according to logical expectations. The utility of the findings regarding changes and stability in these characteristics for those who work with college populations are discussed, and possible applications are suggested.

CHANGES IN GOALS, PLANS, AND BACKGROUND CHARACTERISTICS OF COLLEGE-BOUND HIGH SCHOOL STUDENTS

James F. Carmody
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There is a constant need for timely information about contemporary college students. Teachers, counselors, administrators, and legislators are all vitally concerned with gaining as much comprehensive and reliable information as possible about students' backgrounds, needs, goals, and aspirations. Also, changes in college student backgrounds, goals, and expectations are occurring at such a rapid pace that it is very difficult, if not impossible, for those who provide services to students to adjust their actions accordingly. Educators must be aware of the nature of the changes which are occurring in those students to whom college services are offered.

The findings from the present study provide useful information for those who practice in the fields of college administration, educational evaluation, teacher preparation, curriculum development, and student personnel services, enabling them to become more aware of the significance of their students' self-reported needs, characteristics, and aspirations. Most students require assistance in making appropriate decisions concerning college attendance and other educational problems. Secondary schools and colleges constantly strive to know more about their students. As students increase in number and become more sophisticated, it becomes even more necessary to evaluate the extent to which students' plans change so that available services may be revised or extended accordingly.

The present study consolidated and compared the findings from three previously unpublished ACT research papers (Shevel & Carmody, 1970; Carmody, 1971; Fenske & Carmody, 1971) which have studied changes and consistencies in students' responses to the Student Profile Section (SPS) of the regular ACT Assessment. The SPS consists of a short biographical inventory that provides a means by which students may inform colleges of their academic, out-of-class, and vocational interests and achievements, as well as what they anticipate some of their needs will be (such as housing, financial aid, and etc.) while in college. The first and second reports reviewed in the present study described 2- and 4-year follow-ups, respectively. The third compared 1966 SPS responses with those from 1969.

Analysis of students' responses to the SPS items has been used in the past to assist in predicting student accomplishments while in college (Richards, Holland, & Lutz, 1967). The out-of-class accomplishment scales were found to have moderate reliabilities for college freshmen and sophomores. Lutz (1968) studied the predictive validity of the SPS over a 1-year period using a follow-up questionnaire which was administered at the end of 1 year of college to a sample of students drawn from 35 colleges—14 2-year institutions, and 21 4-year institutions. The results indicated that the out-of-class accomplishment scales of the SPS were "moderately successful" predictors of similar types of accomplishments in college and that "students in their first year of college generally do what they say they will do, or something closely related to it."

[1]This research report was begun while the senior author was a Research Assistant at The American College Testing Program. Dr. Carmody is now Assistant Professor of Education at the University of Massachusetts. Fenske is Senior Research Psychologist and Scott is a Research Assistant at ACT.

Method

The Instruments

The Student Profile Section (SPS) of the regular ACT Assessment was the primary instrument of this study. It is a short biographical inventory which asks prospective college students about their home background, their educational and vocational plans, their goals in attending college, and their interests and achievements in out-of-class areas. Questions concerning their need for financial aid and plans for part-time work are also included.

In the 2-year study, a specially designed follow-up questionnaire was administered to a sample of junior college students in the spring of 1967 and repeated the following topics which were in the initial SPS:

1. Choice of major field
2. Proposed vocation
3. Highest level of education expected to be completed
4. Goals in attending college
5. Proposed employment patterns while in college
6. Intention to have a car on campus
7. Participation in college-related activities.

The 4-year follow-up study was administered in the spring of 1969 to a sample of students in 4-year colleges and included the same items dealing with the seven topics previously listed for the 2-year study with the addition of the topic "anticipated need for financial aid." The specific wording of the items covering these topics is contained in the result section of this report. In addition to the SPS topics mentioned, both studies included analyses of other topics not reported here.

The third research paper reviewed in the present study analyzed student migration and was drawn from a larger study which will be published as a subsequent research report. That study utilized student records of ACT Assessment scores and SPS responses.

The Samples

A total of four samples was used in this study: one each for the 2-year and the 4-year follow-ups, and two independent samples in the third study. Each of the samples is described below.

The 2-year follow-up study (Shevel & Carmody, 1970) used a national sample of junior college students who took the ACT Assessment in 1965 and were completing their second year in the spring of 1967. A total of 4,009 students at 29 2-year colleges responded to the questionnaire, with the number of students at individual colleges ranging from 22 to 490. A comparison of respondents and nonrespondents to the SPS questionnaire indicated that although nonrespondents' scores on the ACT Assessment were slightly lower than the respondents', the two groups were otherwise similar when they entered college.

The natures of the colleges that participated in the study were quite diverse: 21 were public institutions, 4 were independent, and 4 were church-related. The colleges were widely dispersed geographically: 2 being located in the northeastern states, 4 in the southeastern states, 6 in the Great Lakes states, 6 in the plains states, 7 in the southwest and mountain states, and 4 in the far western states. Enrollments in these colleges ranged from 175 students to nearly 13,000. See Shevel and Carmody (1970) for a list of the names of the colleges which were included in the sample.

In a study of 2-year college environments, Baird, Richards, and Shevel (1969) reported that the characteristics of these sample colleges were "close to the national norms on all scales except size. The discrepancy on this scale is probably due to the small number of very small two-year colleges in the sample. . . .Thus the sample colleges appear to be a reasonable cross section of American two-year colleges [p. 3]."

The second follow-up study (Carmody, 1971) covered a 4-year time span and included students in 64 4-year colleges and universities. Initial data were obtained from ACT Class Profile history tapes containing records of students who responded to the SPS during regular administration of the ACT Assessment from October 1, 1964, through August 31, 1965. All of the students whose records were on these tapes entered college as freshmen in September 1965. Four years later, an initial probability sample of 108,203 was drawn from the ACT Class Profile and Plan A Research Services history tapes containing data from 113 colleges in which these freshmen had enrolled. In this sample,

distributions of sex of the students, size of the college in terms of enrollment, geographical dispersion of the colleges, and type of control (public vs. private) were similar to the national distribution of each factor. A follow-up questionnaire was developed and administered by James Richards, Jr., Leonard Baird, and John Holland. Due to a number of administrative problems, the questionnaires were administered in May and June 1969, in a variety of ways at the various colleges. Some colleges conducted one or more follow-ups, some had no follow-ups; some mailed the questionnaires to graduating seniors, others administered the questionnaires in group settings on campus, and still others attempted a mail survey after the seniors had graduated and had left the campus. Thus, it was not possible to determine the exact overall number of students in the sample to whom questionnaires were actually administered, and consequently, the exact response rate for the aggregate sample. A total of 8,983 seniors from 64 different colleges and universities participated in the study by responding to the questionnaire. The data for the 8,983 respondents corresponded quite closely to the random sample as indicated by comparison of percentage and frequency distributions on common variables. Of the 8,983 usable questionnaires, 5,623 were merged back to the students' 1965 ACT Assessment and SPS record. The 1964-65 SPS responses were unavailable for the remaining 3,360 seniors because: (a) they had never taken the ACT Assessment but were asked to complete the questionnaire by their college anyway, (b) they were enrolled in one of the three universities which the original investigators had mistakenly thought were included in the 1965 Class Profile Service, or (c) they were unidentifiable by ACT identification numbers due to misdirected mailing of various batches of questionnaires. An initial attempt was made to estimate possible biases in the data for the respondents compared with the population of those who took the ACT Assessment as prospective freshmen. The frequency and percentage distributions on the key background variables for the larger group of randomly drawn records of 108,203 students were compared with those of the 5,623 students whose records were merged back to the information they had given 4 years earlier. The distributions corresponded quite closely between the two groups on sex, level of education to which the students aspired, family income, college goal, age, and marital status. Fenske (1970) found, however, that the two groups differed in that the present sample represented a somewhat higher distribution of ACT Composite Scores and was overrepresented in the "social, religious, and educational" majors and occupational fields. These differences, however, were not seen as being of sufficient magnitude to warrant weighting procedures in the present study. Nevertheless, because biases may still exist and the response rate cannot be determined, the findings presented herein should be regarded as descriptive only. Although all geographic regions were represented, the majority of the 64 institutions included in this sample are located in the midwestern, southern, and southwestern portions of the United States.

The third study (Fenske & Carmody, 1971) compared the distributions of responses to SPS items from two independent samples of students over a 4-year period. The first sample of students (1966) was drawn by selecting from the ACT Class Profile history tapes, which included only those students who were certified as being enrolled, the record of every tenth student who took the ACT Assessment between October 1, 1965, and August 30, 1966, and who indicated his or her marital status as being single at the time of testing. From a total of 348,416 records, a sample of 32,351 was thus obtained. The second sample for this study (1969) was drawn in the same way but represented students who had taken the ACT Assessment between October 1, 1968, and August 30, 1969. From a total of 542,050 records, a sample of 50,205 was obtained.

The 1966 sample contained records from 796 colleges in 39 states; the 1969 sample contained records from 1,103 colleges in 45 states. These colleges were distributed uniformly among the states involved except in the northeastern and northwestern regions, which had relatively fewer colleges than the remainder of the regions had.

Results

The results of the three studies are presented here separately in the same order in which the samples are described above; i.e., the 2 year follow

up, the 4-year follow-up, and the comparison of responses from the 1966 and 1969 samples.

The 2-Year Follow-Up Study

SPS and follow-up questionnaire data from both the 2- and 4-year follow-ups were cross-tabulated to determine both the percentages of students who made the same response to an item 2 years later and the percentages of those who changed to each of the other possible responses. In all of the tables describing data from the 2- and 4-year follow-ups, the underlined percentages represent the proportion of respondents who made the same choice in the follow-up questionnaire as they had made in the precollege SPS.

Major field of study. Contained in the SPS was a question requesting the student to report his proposed major field of study from a list of 96 choices, including "undecided" and "not included." This question was changed in the follow-up questionnaire to read "find the field that best describes your present major field of training." The major field choices in both instruments were grouped into seven broad areas: social, religious, and educational fields; administrative, political, and persuasive fields; business and finance; science; engineering, agriculture, and technology; medical fields; and arts and humanities. Table 1 contains the percentages of males and females in each area who had retained their precollege choice (underlined percentages) or had changed to a different area.

In Table 1, of the males whose precollege choice was a social, religious, or educational field (column one), 47% subsequently stated that they had majored in the same field; however, 17% had changed their major to an administrative, political, or persuasive field (row two). The remainder were distributed in smaller percentages among the other possible majors.

Of the males, it would appear that those who chose the engineering, agricultural, and technology fields were the most consistent in their decision, 61% making the same response on the follow-up. For the females, those who were the most consistent in their choice originally chose social, religious, and educational fields (69%); the arts and humanities (63%); or business and finance fields (58%). Further, it appears that when females changed their minds about their college major, they were most likely to choose one of the social, religious, and educational areas, especially if they were originally "undecided." Males' changes in major, on the other hand, were spread more evenly over the range of areas.

The males who originally chose a major in one of the medical fields were more likely to have changed their major during the 2-year period than were any other group. Only 34% made the same response on the follow-up. The largest shifts in choice were toward the social, religious, and educational fields (16%) or the scientific field (15%).

Overall, 43.8% of the males indicated the same choice of major field after 2 years; for females, this figure was 52.5%. For the total group, the figure was 47.3%. The greater consistency of choice for females may be attributable to a more restricted range of fields which are typically open and attractive to them. For example, few females indicated engineering, agricultural, technical, scientific, or business and finance fields in either the precollege or the follow-up questionnaire. Further, a lower percentage of females than males indicated that they were undecided before entering college (14.1% and 21.7%, respectively).

Proposed vocation. Precollege and current responses to the request, "From the list above, find the field that best describes your future vocation," are contained in Table 2. Occupations are grouped according to Holland's occupational scheme (Holland et al., 1969). Social, religious, and educational choices were the most consistent for both males (59%) and females (73%). Males' choices were generally more consistent in more vocational areas than females' choices: at least 50% of those males who originally chose a vocation in the social, religious, and education fields; the business and finance fields; the engineering, agricultural, and technological fields; or the medical fields preferred the same field after 2 years in college. A majority of the females had in the interim changed their choice of vocation in every area except the social, religious, and education fields. However, the overall figure for females who made consistent vocational choices was higher (44.1%) than was the case for males (41.2%), due to (a) the disproportionately larger number of males who were undecided on the SPS compared with females, and (b) the

TABLE 1

Percentages of Students in the 2-Year Follow-Up Who Changed or Who Retained Their Precollege Choice of Major Field of Study

	Precollege Choice—Males							
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Soc., rel., educ.	47%[a]	10%	9%	6%	6%	16%	8%	21%
2. Admin., polit., pers.	17	54	31	3	4	9	12	25
3. Bus. & finance	6	16	44	2	5	6	2	10
4. Science	9	2	4	57	9	15	3	11
5. Engr., ag., tech.	4	4	1	17	61	10	11	14
6. Medical	1	2	1	4	2	34	0	2
7. Arts & humanities	8	5	5	4	3	3	51	5
8. Undecided	6	5	4	6	5	7	8	12
9. Other	3	1	1	2	5	1	6	4
N	172	183	140	113	397	89	93	327

	Precollege Choice—Females							
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Soc., rel., educ.	69%[a]	25%	24%	20%		24%	24%	45%
2. Admin., polit., pers.	3	28	3	2		0	2	4
3. Bus. & finance	6	21	58	2		7	3	16
4. Science	3	4	1	41		2	2	6
5. Engr., ag., tech.	0	0	1	5		0	0	0
6. Medical	2	4	1	15		46	1	6
7. Arts & humanities	13	15	4	2		8	63	9
8. Undecided	3	2	3	5		9	4	14
9. Other	2	2	4	7		4	1	4
N	379	53	136	41	<10[b]	132	115	141

[a]Numbers indicate the percentages of those in column who 2 years later gave the row response. Underlined percentages represent those who 2 years later gave the same response.

[b]In this, and all subsequent tables, percentages in columns containing less than ten students are eliminated.

TABLE 2

Percentages of Students in the 2-Year Follow-Up Who Changed or Who Retained Their Precollege Vocational Choice

	Precollege Choice—Males								
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Soc., rel., educ.	59%[a]	10%	10%	11%	8%	10%	11%	18%	21%
2. Admin., polit., pers.	11	49	22	7	4	8	12	8	17
3. Bus. & finance	4	11	50	7	4	3	4	7	10
4. Science	4	1	5	36	6	4	3	2	3
5. Engr., ag., tech.	4	4	3	21	57	6	13	25	13
6. Medical	1	1	0	4	4	52	0	6	3
7. Arts & humanities	4	4	4	4	2	1	43	6	3
8. Other	4	5	1	2	4	6	1	15	6
9. Undecided	10	15	6	9	10	10	13	13	24
N	169	135	110	56	317	79	76	125	416

	Precollege Choice—Females									
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Soc., rel., educ.	73%[a]	42%	21%	36%		26%	50%	32%	44%	56%
2. Admin., polit., pers.	1	17	3	0		2	3	10	3	0
3. Bus. & finance	5	10	46	0		7	4	8	13	6
4. Science	1	2	3	14		1	0	1	1	0
5. Engr., ag., tech.	1	0	0	7		0	0	0	0	0
6. Medical	3	2	2	21		44	1	7	4	19
7. Arts & humanities	5	7	1	0		3	30	13	8	6
8. Other	2	10	1	0		3	1	10	1	0
9. Undecided	5	7	12	14		9	7	11	17	0
10. Housewife	4	2	11	7		5	4	7	9	13
N	342	41	120	14	<10	129	74	71	179	16

[a]Numbers indicate the percentages of those in column who 2 years later gave the row response.

large number of females who originally chose social, religious, and educational fields and who later indicated these same fields as their current vocational choice.

The group consistency for males and females combined was 42.4%. This percentage was lower than the 47.3% recorded for major field, indicating that major field was somewhat easier to select and to maintain during the 2 years in junior college than was choice of vocation or occupation. This result is interpretable in view of the fact that for this junior college sample the end of the second year represented a decrease in uncertainty of major field choice for those who would transfer to 4-year colleges because of academic commitments but not necessarily a decrease in uncertainty about vocation or occupation, which was still at least 2 years away. This interpretation, of course, applies only to students who intended to transfer. In describing this sample, Baird, Richards, and Shevel (1969) found that only 10.5% expected to terminate their formal education after completing their 2-year college program. The remainder expected to obtain a bachelor's degree or higher. Students' degree aspirations were consistent with their emphasis on transfer.

The results shown in Tables 1 and 2 are consistent with the findings of Holland and Whitney (1968), who, in studying the changes in occupational plans of college students, found that 69% of males chose an occupation 8 or 12 months later in the same major class as their original choice, and 10% made choices that were closely related. The data for females in the present study were, however, less consistent with Holland's findings. Since a majority of women who are employed work in the "social, religious, and education" occupations, the consistent trend for females over the first 2 years of college to change their majors and vocational preferences to areas most popular in the national scene was to be expected.

Degree aspirations. Contained in the SPS and the follow-up questionnaire was the question, "What is the highest level of education you expect to complete?" Table 3 shows that the junior college students' responses indicated that if they initially chose to aspire to less than a bachelor's degree (BA), then 2 years later they very likely had raised their aspirations to a bachelor's or master's degree. This tendency was especially evident with the male group. Of the males who made an initial choice of "less than BA," 82% chose a bachelor's or higher degree 2 years later.

Those students who initially chose a bachelor's degree were much more likely to have raised their aspirations than to have lowered them. Of those female students who initially expected to complete a bachelor's degree, 52% subsequently made the same choice, only 9% had lowered their aspirations, and 38% had raised them. These percentages were very similar for males. Students who originally had expectations of receiving a master's or some higher degree were more likely 2 years later to have chosen the same or a lower degree target. The focal point of most changes was either the bachelor's or the master's degree, those having lower initial aspirations moving up to these degrees and those with initial aspirations for the various doctoral level degrees switching primarily to master's level. In general, changes in either direction were predominantly to the next degree. *None* of those originally choosing a doctoral level shifted to a junior college degree; conversely, only a very small percentage of the changes were from junior college to doctoral degrees. For this sample, the degree showing the lowest rate of retention was the MD, with only about 16% of the 44 males and females retaining this choice after 2 years of junior college.

The figure for those who retained their original degree aspirations was 42.8% for males and 47.8% for females. The overall retention rate was 44.8% for the total sample. The junior college students who changed degree aspirations were three times as likely to have revised their sights upward rather than downward. Of the 1,355 respondents who changed (excluding "Other"), 1,055 (78%) shifted to a higher degree. Evidently, junior colleges are to some extent accomplishing their much-publicized purpose of raising the educational goals of those who enter with modest aspirations. Baird (1969) found that those students who did not raise their degree aspirations were no less talented as a group than were 2-year college students who raised their aspirations.

Goals in attending college. The question, "What is your most important goal in attending college?" was contained in both the SPS and the follow-up questionnaire. Analysis of responses showed that 93% of the students initially chose as their most

important goal one of the following three: "To develop my mind and intellectual abilities," "To secure vocational training," or "To earn a higher income." For the purposes of this study, the other seven categories were grouped under the heading of "Other" (see Table 4).

As indicated by the column totals, the opportunity provided for vocational and professional training appeared to be the most popular reason for attending college prior to enrolling in junior colleges. About 55% of this sample selected this goal in the SPS, and well over half of these respondents retained this choice 2 years later. The goal of vocational and professional training was not only the most popular initially and showed the highest retention rate but also attracted more of those who changed their goal over the 2-year period. The development of mind and intellectual abilities was the second most popular and consistent goal. This response was made by 47% of the males and 51% of the females. The opportunity to earn a higher income was expressed as a goal by 37% of the males and 7% of the females who had that as a choice 2 years before. Most of the males and females who changed their responses chose as their new goal either "develop intellectual ability" or "vocational and professional training."

Slightly under half (49.4%) of the total sample retained their original choice with a marked difference in rate of retention shown between males and females (47.5% and 52.3%, respectively).

Employment patterns. Contained in the SPS was a question which asked whether or not the student planned to work while attending college and if so

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TABLE 3

Percentages of Students in the 2-Year Follow-Up Who Changed or Who Retained Their Precollege Degree Aspirations

	Precollege Choice—Males							
Current choice	**JC**	**BA**	**MA**	**PhD**	**MD**	**DDS**	**LLB**	**Other**
Junior college degree	16%	4%	3%	0%	0%	0%	0%	8%
Bachelor's	60	51	22	13	16	20	19	14
Master's	18	38	58	29	46	27	22	47
PhD	1	4	9	50	6	0	11	11
MD	1	0	3	4	23	13	0	3
DDS	1	0	1	0	0	33	0	3
LLB	1	1	2	4	6	0	47	6
Other	3	1	2	0	3	7	0	8
N	350	736	316	48	32	15	36	36

	Precollege Choice—Females							
Current choice	**JC**	**BA**	**MA**	**PhD**	**MD**	**DDS**	**LLB**	**Other**
Junior college degree	40%	9%	6%		0%			42%
Bachelor's	42	52	31		50			39
Master's	15	36	58		50			10
PhD	0	2	1		0			0
MD	0	0	0		0			0
Other	3	0	4		0			10
N	288	505	201	<10	12			31

TABLE 4

Percentages of Students in the 2-Year Follow-Up Who Changed or Who Retained Their Precollege Goal in Attending College

Current choice	Precollege Choice—Males 1	2	3	4
1. Develop int. ability	47%	26%	22%	29%
2. Voc. and prof. training	32	54	34	35
3. Earn higher income	13	14	37	12
4. Other	7	5	6	24
N	425	846	223	85

Current choice	Precollege Choice—Females 1	2	3	4
1. Develop int. ability	51%	32%	37%	35%
2. Voc. and prof. training	34	58	48	33
3. Earn higher income	3	3	7	3
4. Other	13	8	8	29
N	352	600	27	75

how many hours each week he intended to be employed. The follow-up questionnaire asked if he had worked, and if so, to what extent. The results are shown in Table 5.

The majority of students indicated on the follow-up that they had worked at least some of the time since they had taken the SPS. Only 14% of the males and 19% of the females had not worked at all. Of those who had indicated on the SPS that they expected to work, 91% of the males and 88% of the females had engaged in some form of employment, thus indicating a high degree of consistency among this group. This consistency is, however, offset somewhat by the group who had stated that they did not expect to work. Of this group of respondents, only 27% of the males and 32% of the females did not, in fact, work. Thus, most junior college students who had not expected to work in college were, in fact, employed at some time during their first 2 years of attendance. This same group, however, appeared to be employed less regularly at part-time jobs than the group which had expected to work during college; 20% of the males and 18% of the females who had not expected to work part time responded as having worked "always part-time," whereas, of the students who had expected to work, 35% of the males and 38% of the females made this response. Very few students in either group (1% to 4%) worked full time, either "always" or "sometimes."

Car on campus. A question in the SPS asked, "Do you expect to take a car to campus?" The follow-up questionnaire contained the question, "What provisions have you made for transportation while you are in college?" and provided for three responses indicating car use on or to campus and two responses indicating nonuse of a car on or to campus. Table 6 compares these two sets of responses separately for those who had expected to take a car to campus versus those who had not.

TABLE 5

Percentages of Students in the 2-Year Follow-Up Who Changed or Who Retained Their Precollege Decision to Seek Employment While in College

Current choice	Precollege Choice—Males Expect to work	Do not expect to work
Did not work	9%	27%
Sometimes worked part time	32	38
Always worked part time	35	20
Worked both full and part time	17	9
Sometimes worked full time	3	4
Always worked full time	4	2
N	1,110	464

Current choice	Precollege Choice—Females Expect to work	Do not expect to work
Did not work	12%	32%
Sometimes worked part time	35	44
Always worked part time	38	18
Worked both full and part time	10	3
Sometimes worked full time	3	2
Always worked full time	2	1
N	638	411

TABLE 6

Percentages of Students in the 2-Year Follow-Up Whose College Transportation Patterns Remained Consistent with Their Precollege Choice

	Precollege Choice—Males	
Current choice	**Will have car**	**No car**
No car - live on campus	6%	25%
No car - commute	6	5
Have car - live on campus	24	27
Have car - commute	63	33
	Precollege Choice—Females	
Current choice	**Will have car**	**No car**
No car - live on campus	16%	48%
No car - commute	16	26
Have car - live on campus	12	8
Have car - commute	57	19

Evidently most males and females who had expected to take a car to campus did, in fact, realize their expectations (87% and 69%, respectively). In contrast, over one-fourth (27%) of the females and over 60% of the males who had indicated to the college via the SPS that they did *not* expect to bring a car reported later that they either lived on campus and had a car or commuted to campus by personal car. Clearly, actual car use on campus by students was far greater than anticipated. While any visitor to a typical campus could substantiate this finding in terms of parking and congestion, these data do provide additional insights. For example, males who commuted to junior college showed a notably high rate of car usage on campus. Campus planners should find these data particularly useful.

College-related activities. Nine items on the SPS were concerned with activities that are commonly related to student life. Respondents were asked whether or not they planned to participate in any of the following: intercollegiate athletics, intramural athletics, acting, music, writing, debate, student government, departmental clubs related to major field, or science clubs and projects. Analogous items contained in the follow-up questionnaire provided for the respondents to indicate whether or not they had, in fact, participated in these activities during the preceding 2 years. Table 7 indicates that in almost all activities those students who initially stated that they did not plan to participate had more realistic expectations than those who initially stated that they did plan to participate.

The only two activities where more than 13% of those who did not plan to participate actually did were departmental clubs (20% males, 29% females) and intramural athletics (22% males, 15% females). It is probably no coincidence that these two activities are usually the least selective and benefit the most from recruiting by fellow students and interested faculty members.

Of more general importance, however, is the rather startling finding that in these student-oriented junior colleges there was not a single

TABLE 7

Percentages of Students in the 2-Year Follow-Up Who Actually Participated in College-Related Activities

	Precollege Choice—Males	
Current choice	**Will participate**	**Will not participate**
Intercollegiate athletics	42%	6%
Music	45	4
Writing	18	5
Student government	20	6
Science clubs	18	4
Debate	9	7
Acting	24	4
Departmental clubs	24	20
Intramural athletics	48	22
	Precollege Choice—Females	
Current choice	**Will participate**	**Will not participate**
Intercollegiate athletics	25%	5%
Music	47	11
Writing	24	6
Student government	27	13
Science clubs	13	4
Debate	2	1
Acting	20	5
Departmental clubs	39	29
Intramural athletics	38	15

activity in which at least half of those who planned to participate actually did so. The most striking case is that of debate where there was practically no participation among those who had planned on participating. The only plausible explanation seems to be that either debate was simply not available as an activity in these junior colleges or that it was available only on an extremely selective basis. Whatever the explanation, these students before college entrance were clearly unrealistic about their chances of participating in college debate. Are these students' high school debate coaches and counselors in possession of accurate information, and if so, are they providing it to their students? Are junior college faculty and administrators aware of the unrealized demand and student expectation of participation in debate and, for that matter, in all of the other activities? These data indicate that such questions need to be given careful consideration by all who are responsible for student activities.

The 4-Year Follow-Up Study

Data from the 4-year follow-up study were cross-tabulated and are presented in the same format as in the 2-year follow-up section.

Major field of study. Table 8 contains a cross-tabulation of the percentages of students who changed or retained their original choice of major field over the 4-year period. The majors are grouped into the same nine categories as shown in the analogous table (Table 1) for the 2-year study.

Females with social, religious, and education majors appeared to be the most stable group with 74% of them retaining their original choice on the follow-up. The most stable combined group of males and females was the one originally choosing the arts and humanities: 59% of the males and 61% of the females retained a major in that area. Of the females who originally selected the arts and humanities area, 27% chose a major in the social, religious, and education area. For the males who changed from arts and humanities, the most popular choices were the social (14%) and administrative (13%) areas.

The *average* of the rates of consistent choice across all major fields was the same for males and females (33%); however, the distributions of these rates were quite different. Females had consistency rates lower than 40% in all categories except two; but these two had very high rates and contained over two-thirds of the cases. Males had consistency rates higher than 40% in five of the nine categories.

Overall, the percentage of males indicating a consistent choice was much lower (37.1%) than for females (52.4%), with the very high rate (74%) of consistency for females in the preponderant social, religious, and education fields being most influential upon this difference. It is of interest to note that the overall rate of consistency for females was virtually the same for both the 4-year and the 2-year studies—52.4% and 52.5%, respectively. However, for males the rate was somewhat lower (37.1%) in the 4-year study than in the 2-year study (43.8%).

The fact that the rate of consistency was nearly one-third higher for females than males in the 4-year study is in agreement with the observation of a similar pattern in the 2-year study, namely, that, as indicated by the distribution of cases among the major fields, a far more restricted range of fields was initially open and attractive to this sample of females. Furthermore, as in the 2-year study, there were relatively fewer females than males who were undecided before entering college.

It is also of interest to note the patterns of change among the major fields. The largest single percentage change for males (36%) was from the medical field to the scientific field. However, the fields which were most attractive generally for males who changed were the social, religious, and educational fields. Almost as attractive for males who changed majors were the administrative, political, and persuasive fields, especially for those who originally selected the business and finance field; the social, religious, and educational fields; and those who were undecided. For females, the pattern was not nearly so diffuse. The social, religious, and educational fields attracted the vast majority of changes, reflecting once again the relatively constricted range of major field choices selected by college females. These data should not be construed to imply any deliberate or even conscious policy on the part of these colleges to

TABLE 8

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Choice of Major Field of Study

	Precollege Choice—Males								
Current choice	1	2	3	4	5	6	7	8	9
1. Soc., rel., educ.	47%	16%	15%	14%	8%	16%	14%	24%	22%
2. Admin., polit., pers.	19	43	30	7	8	15	13	12	23
3. Bus. & finance	3	23	37	9	10	7	3	6	15
4. Science	10	4	9	48	12	36	3	0	16
5. Engr., ag., tech.	4	3	2	14	53	6	5	23	11
6. Medical	1	1	0	2	0	14	1	6	3
7. Arts & humanities	14	7	4	5	7	4	59	23	7
8. Not included	1	0	0	0	0	1	1	0	1
9. Undecided	1	3	3	1	2	1	2	6	2
N	291	331	180	375	550	263	191	17	434

	Precollege Choice—Females								
Current choice	1	2	3	4	5	6	7	8	9
1. Soc., rel., educ.	74%	37%	50%	31%		36%	27%	80%	56%
2. Admin., polit., pers.	5	29	13	5		2	5	0	6
3. Bus. & finance	1	7	24	5		1	1	0	2
4. Science	3	0	0	35		12	3	0	8
5. Engr., ag., tech.	0	0	2	1		1	0	0	1
6. Medical	1	0	0	8		37	0	0	4
7. Arts & humanities	15	21	10	15		10	61	20	20
8. Not included	0	0	0	0		1	0	0	0
9. Undecided	1	6	1	0		1	3	0	3
N	958	72	62	110	<10	209	261	15	272

restrict women's choices of major. More likely, the restrictions are self-imposed and are a product of deep-rooted and pervasive social pressures regarding "appropriate" academic studies and occupations for women.

Proposed vocation. Contained in Table 9 are the percentages resulting from a cross-tabulation of students' original and current vocational choices. The same divisions were used as with the choice of major field, with the addition of "housewife" as a categorical choice for females.

As might be expected in view of the consonance between major field and proposed vocation, the pattern of stability and change shown was similar to that of the preceding table. Again, the most stable precollege vocational choice of both males and females was in the social, religious, and educational fields. Of the total sample 60% of the males and 76% of the females retained this choice 4 years later. This group of occupations also attracted the vast majority of those who had changed their proposed vocation during their undergraduate years. Another index of the near inevitability of the social, religious, and educational vocations as an occupational destiny was that over half (53%) of the relatively large number

TABLE 9

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Vocational Choice

	Precollege Choice—Males								
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Soc., rel., educ.	60%	18%	13%	19%	14%	16%	14%	19%	22%
2. Admin., polit., pers.	12	47	28	10	11	14	15	14	16
3. Bus. & finance	4	16	39	7	8	8	6	8	14
4. Science	5	2	3	30	6	5	1	6	8
5. Engr., ag., tech.	2	2	2	11	42	5	8	27	10
6. Medical	1	1	1	3	2	32	2	5	4
7. Arts & humanities	5	4	2	4	4	3	37	5	6
8. Other	7	10	9	9	8	11	10	6	15
9. Undecided	4	1	3	6	6	6	8	11	6
N	299	254	174	194	461	263	145	146	350

	Precollege Choice—Females									
Current choice	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Soc., rel., educ.	76%	35%	54%	48%		37%	51%	39%	48%	53%
2. Admin., polit., pers.	3	22	4	6		2	3	11	0	3
3. Bus. & finance	1	6	24	2		2	2	3	5	2
4. Science	1	0	2	6		3	2	2	0	3
5. Engr., ag., tech.	0	0	0	0		0	0	1	5	1
6. Medical	1	0	0	11		39	2	6	5	4
7. Arts & humanities	5	9	4	4		2	24	10	0	8
8. Not included	7	15	4	12		6	9	10	5	14
9. Housewife	4	3	7	2		3	3	4	24	3
10. Undecided	3	9	2	10		5	4	14	9	9
N	914	65	55	52	<10	215	136	115	21	350

(350) of initially undecided females had chosen a vocation in this group over all others 4 years later. This concentration is in sharp contrast to the much greater dispersion of later vocational choices of the same number of initially undecided males. It is of special interest to note that only 6% of the females who had initially indicated a scientific vocation had retained this choice, with about half of them (48%) shifting to the social, religious, and educational types of vocations.

The females in both the 4-year and the 2-year samples only rarely thought of themselves as future scientists, sales or business women, or technologists. Rather, they ended their undergraduate college careers with occupational expectations traditionally held to be appropriate for women, such as elementary or secondary school teaching.

Overall, 39.7% of the 4-year respondents were consistent in their precollege and later vocational choices. This percentage is slightly lower than the percentage in the 2-year sample (42.4%). This difference may be expected since the 4-year sample had twice as long a period in which to reconsider and to change. As in the 2-year sample, females were, on the average, more consistent in their choices (46.3%) than were males (34.2%).

TABLE 10

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Degree Aspirations

	Precollege Choice—Males								
Current choice	<BA	BA	MA	PhD	MD	DDS	LLB	BD	Other
Bachelor's	48%	33%	18%	7%	9%	21%	14%	5%	19%
Master's	38	51	55	35	30	45	28	21	48
PhD	8	9	16	45	18	11	16	42	21
MD	1	1	2	3	32	4	0	0	2
DDS	0	0	0	1	5	9	0	0	3
LLB	3	3	6	6	2	6	40	0	2
BD	1	1	1	1	0	2	1	26	0
Other	1	1	2	3	4	2	1	5	5
N	200	1,185	759	158	152	53	90	19	58

	Precollege Choice—Females								
Current choice	<BA	BA	MA	PhD	MD	DDS	LLB	BD	Other
Bachelor's	50%	34%	17%	13%	21%				57%
Master's	48	61	73	58	50				39
PhD	1	3	8	20	15				4
MD	0	0	0	2	12				0
DDS	0	0	0	0	0				0
LLB	1	0	1	0	3				0
BD	0	0	0	0	0				0
Other	1	1	1	7	0				0
N	197	1,199	506	45	34	<10	<10	<10	23

Degree aspirations. The questionnaire administered to college students 4 years after they had first enrolled as freshmen asked the respondent to indicate the highest level of education he or she expected to complete. Table 10 shows the percentage distribution of these responses cross-tabulated by their precollege responses.

Overall, 37.8% indicated degree aspirations consistent with their choice 4 years earlier. A higher percentage of females made a consistent choice (39.6%) than did males (36.5%). This difference is mainly accounted for by the high percentage of females who persisted in aspiring toward an MA degree (73%) compared with males (55%). The pattern of stability and change was similar for males and females who had originally indicated a BA or less, but for the PhD and MD striking differences occurred. More than twice as large a percentage of males persisted in both the PhD and MD degree aspiration (45% and 32%, respectively) than did females (20% and 12%, respectively). These data show that females who originally aimed very high were much more likely to lower their sights than were males. Unfortunately, the data did not show why they no longer aspired toward PhD or MD degrees. It is probable that no one answer

applies; some may simply have had enough of school after 4 undergraduate years; others may have made their decision for reasons related to their status as women. The latter reasons may have included lack of financial support in cases where males would receive the required support, marrying males who needed the support of a working wife for their own graduate programs, a lack of adequate child care facilities, or discouragement from teachers and advisors about the prospects of females being able to succeed in PhD or MD programs and then competing successfully in the professions.

Three of the professions had fairly low but comparable rates of consistent aspirations for males (32% for MD, 40% for LLB, and 26% for BD); however, one profession, dentistry, had the strikingly low consistency rate of 9%.

Goals in attending college. Respondents in the 4-year study were asked, "What is your most important goal in attending college?" This goal was selected from a list identical to that presented to them in the SPS they had filled out prior to entering college. Both sets of responses were cross-tabulated and are contained in Table 11.

Whichever goal the students initially indicated as being most important, only 37.8% retained their choice over a 4-year period. Males were just about as unlikely to have retained their most important goal as were females (36.5% vs. 39.6%, respectively).

The most important goal in attending college for a substantial majority of students was "to secure vocational or professional training." Not only was this the most popular goal, but it was also the most stable; 47% of the males and 57% of the females retained this goal over the 4-year period.

About 95% of the substantial number (879) of college seniors who 4 years earlier had checked "learn how to enjoy life" as their most important goal, had changed their goal. Of these, about three-fourths had switched either to "develop my

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TABLE 11

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Goal in Attending College

	Precollege Choice—Males				
Current choice	1	2	3	4	5
1. Learn how to enjoy life	4%	2%	3%	3%	5%
2. Develop my mind and intellectual abilities	33	42	26	21	29
3. Secure vocational-professional training	41	33	47	32	35
4. Earn a higher income	13	9	12	32	0
5. Other	9	14	12	12	31
N	624	817	1,463	237	123

	Precollege Choice—Females				
Current choice	1	2	3	4	5
1. Learn how to enjoy life	6%	4%	3%	5%	9%
2. Develop my mind and intellectual abilities	41	42	26	32	26
3. Secure vocational-professional training	37	37	57	36	37
4. Earn a higher income	4	1	2	14	4
5. Other	12	16	12	13	24
N	255	773	1,051	22	130

mind and intellectual abilities" or to "secure vocational-professional training." There are at least three plausible interpretations of the nearly unanimous switch from the original goal of learning how to enjoy life. One is a developmental view, namely, that learning how to enjoy life was a goal that was superseded in the maturation process taking place during the 4 undergraduate years. A second interpretation is that regardless of developmental or maturational processes, these students found that college was simply not the place to "learn how to enjoy life." Finally, it may be that many of the students who originally sought this goal were no longer in college at the end of the fourth year (and thus not included in this follow-up study) either because their hedonistic pursuits precluded acceptable academic work or because they decided to seek their goal of enjoyment of life elsewhere than in college.

These data indicate that patterns of change and stability in college goals were remarkably similar for males and females. For both sexes, vocational training and intellectual development were of major importance, with an early interest in learning to enjoy life on the part of a minority being relinquished in favor of these two goals. The striking sex difference in major field, vocation, and educational aspiration noted previously as emerging after 4 years of college are all the more important when it is considered that females seek the same *types* of goals in college as males.

In the analogous table showing college goals for the 2-year sample (Table 4), "learning how to enjoy life" was selected originally by so few students that it was not shown separately but was, instead, included in the category termed "Other." In general, however, the pattern of change and stability in college goals was similar in the 2- and 4-year samples.

Employment patterns. Table 12 indicates that the great majority (about 80%) of students worked full or part time at some time during the 4-year period studied. Those students who had indicated on the SPS that they did not expect to work did not appear very consistent with their original choice. Of these, only 25% of the males and 36% of the females actually did not work during the 4-year period. These figures are very similar to those obtained from the 2-year sample.

TABLE 12

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Decision to Seek Employment While in College

	Precollege Choice—Males	
Current choice	Expect to work	Do not expect to work
Did not work	13%	25%
Sometimes worked part time	37	42
Always worked part time	25	16
Worked both full and part time	22	15
Sometimes worked full time	1	1
Always worked full time	2	1
N	1,654	1,037

	Precollege Choice—Females	
Current choice	Expect to work	Do not expect to work
Did not work	15%	36%
Sometimes worked part time	40	44
Always worked part time	29	12
Worked both full and part time	15	7
Sometimes worked full time	0	1
Always worked full time	1	0
N	1,007	1,001

Those students who originally stated that they intended to work were far more realistic. Of these, only 13% of the males and 15% of the females indicated that they did not work during the 4-year period.

Sex differences in employment centered around the greater propensity for males than females to undertake employment, both those who had initially expected to work and those who had indicated they had not expected to work.

These 4-year sample students had a substantially lower rate of work expectations and experiences than the 2-year sample students. Nearly three-fourths (72.9%) of the males in the 2-year sample initially expected to work compared with less than two-thirds (61.5%) of the males in the 4-year

sample. For females, these figures were 60.8% and 50.1%, respectively.

Car on campus. Table 13 shows that considerably more males than females indicated on the SPS that they expected to have a car on campus.

Throughout the 4-year period, a majority of those students who initially expected to have a car on campus did, in fact, have a car on campus. The percentage increased each year until the fourth year when 91% of the males and 78% of the females who expected to have a car did, in fact, have one.

Those students who had not originally expected to have a car on campus were much less realistic; more than three-fourths (78%) of the males and nearly one-half of the females (43%) did, in fact, have a car on campus by their senior year in college. Apparently, the desire to have one's own private transportation was so strong that it overrode original expectations as well as obstacles such as expense and lack of parking on most campuses. Overall, actual car use on campus by students was far greater than anticipated by students. This effect was even more pronounced for this sample than was shown for the 2-year sample in Table 6.

College-related activities. Contained in the initial SPS questionnaire was a list of nine college-related activities. The student was asked to indicate in which, if any, he planned to participate. The activities contained in the list were music, writing, student government, science clubs and projects, debate, acting, departmental clubs related to his major field, intramural athletics, and varsity athletics. The follow-up questionnaire contained a list of the same nine activities and asked the student to indicate whether that activity was available at his college and, also, if he had participated in it. Table 14 shows a cross-tabulation of the SPS and follow-up questionnaire responses.

TABLE 13

Percentages of Students in the 4-Year Follow-Up Who Changed or Who Retained Their Precollege Expectation to Have a Car on Campus

	Precollege Choice—Males			
	Expect to have car		Do not expect to have car	
Current choice	*Did have car*	*Did not have car*	*Did have car*	*Did not have car*
This academic year ('68-'69)	91%	9%	78%	22%
1 year ago ('67-'68)	85	14	61	38
2 years ago ('66-'67)	79	20	41	58
3 years ago ('65-'66)	70	29	22	77

	Precollege Choice—Females			
	Expect to have car		Do not expect to have car	
Current choice	*Did have car*	*Did not have car*	*Did have car*	*Did not have car*
This academic year ('68-'69)	78%	22%	43%	57%
1 year ago ('67-'68)	72	27	22	77
2 years ago ('66-'67)	68	31	14	85
3 years ago ('65-'66)	64	36	8	91

TABLE 14

Percentages of Students in the 4-Year Follow-Up Who Realized and Who Did Not Realize Their Precollege Expectation to Participate in Certain College-Related Activities

Precollege Choice—Males

	Planned to participate			Did not plan to participate		
	Did not participate		*Did participate*	*Did not participate*		*Did participate*
Current choice	Not avail. at college	Avail. but didn't part.		Not avail. at college	Avail. but didn't part.	
Music	1%	52%	47%	2%	91%	8%
Writing	2	71	27	3	88	9
Student government	0	66	34	0	84	16
Science clubs	4	67	29	1	90	9
Debate	4	85	11	3	94	2
Acting	0	78	22	1	95	5
Departmental clubs	5	36	59	5	45	50
Intramural athletics	0	27	73	1	58	42
Varsity athletics	1	64	35	2	93	5

Precollege Choice—Females

	Planned to participate			Did not plan to participate		
	Did not participate		*Did participate*	*Did not participate*		*Did participate*
Current choice	Not avail. at college	Avail. but didn't part.		Not avail. at college	Avail. but didn't part.	
Music	1%	51%	48%	1%	87%	12%
Writing	2	72	26	3	89	8
Student government	0	65	35	1	83	17
Science clubs	2	78	19	2	92	6
Debate	6	86	8	4	94	2
Acting	1	78	21	1	93	6
Departmental clubs	6	25	70	8	42	51
Intramural athletics	1	52	47	2	80	18
Varsity athletics	9	75	15	4	93	3

From the data contained in Table 14 it appears that the majority of male and female students, whatever their initial plans concerning their involvement in the activities listed, did not subsequently participate in them. There were only two activities that did not appear to fit this pattern: departmental clubs related to major field and intramural athletics. A majority of the students who planned to participate in these two activities actually did so. Further, about half of the students who did not plan to participate in departmental clubs actually did so during college. Nearly half (42%) of the males participated in intramural athletics although they had not expected to do so before entering college.

The general question raised by these data is the same as that emerging from the 2-year sample (see Table 7), namely, why a majority of the students who planned to participate in these activities did not do so. (These data show that the activities were available on the campuses in all but an insignificant percentage of the cases.) The lack of participation

may have been at least partly attributable to a greater than expected amount of time devoted to study in college and to work. Some of those students who nonetheless found time to investigate the activities may have found them different enough from their expectations to have become discouraged from participating. Other reasons may have centered around lack of communication or ineffective organization of these activities.

Financial aid. The initial SPS questionnaire contained an item asking students, "Will you need financial aid from either a scholarship or loan?" Three response categories were available: "Yes, during my freshman year and probably thereafter"; "Yes, but probably not during my freshman year"; and "Probably never." The follow-up questionnaire asked students to indicate whether loans or scholarships had been a major source, a minor source, or not a source of financial aid for college over the 4-year period.

From Table 15 it would seem that those freshmen with the most realistic outlook were those who did not anticipate assistance from either of those sources. Of the males and females who did not anticipate a scholarship or loan as a source of aid, 77% subsequently listed scholarships as not being a source. Of those who did not anticipate needing loans, 80% of the males and 86% of the females subsequently listed loans as not being a source of finance. Other information available in this study indicated that this group of respondents relied heavily upon their parents' support.

Of those students who as freshmen anticipated a need for finance from a scholarship or loan throughout college, only between 23% to 32% of the males and females listed either of these as

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TABLE 15

Percentages of Students in the 4-Year Follow-Up Whose Source of Financial Aid Was Consistent with Their Precollege Anticipation

	Precollege Anticipated Need, Scholarship, or Loan—Males		
Current choice	**Aid throughout**	**After first year**	**No aid**
Scholarships			
Major source	23%	10%	8%
Minor source	36	22	15
Not a source	41	68	77
Loans			
Major source	27	13	9
Minor source	22	21	12
Not a source	51	66	80

	Percollege Anticipated Need, Scholarship, or Loan—Females		
Current choice	**Aid throughout**	**After first year**	**No Aid**
Scholarships			
Major source	27%	11%	5%
Minor source	37	27	18
Not a source	36	62	77
Loans			
Major source	32	17	7
Minor source	17	17	7
Not a source	51	66	86

having been a major source of aid 4 years later. A total of 51% of the males and females listed loans as not being a source of finance at all. Of the total, 59% of the males and 54% of the females who made this initial response, however, did rely on scholarships as either a major or a minor source of finance.

Only a small minority of those students who looked to scholarships or loans as sources of finance after the first year of college subsequently used them as such. Other information showed that this group of respondents relied heavily on parental support (particularly the females) and employment or personal savings (particularly the males).

Comparison of the Distributions of the 1966 and 1969 Samples' Responses

This section contains a comparison of the distributions of responses to student background items made by high school seniors who took the ACT Assessment in 1966 and 1969.

Average high school grades. At the time of administration of the ACT Assessment, the student is asked to give the last letter grade that he earned by the end of his junior year in high school in social studies, English, mathematics, and natural sciences. In the student's ACT record, this letter grade is converted to a numeric grade. After conversion an "A" equals 4.00, a "B" equals 3.00, etc. A recent study by Maxey and Ormsby (1971) indicated that high school students' self-reported grades and out-of-class activities were accurate sources of information regardless of income level, sex, race, or class size. The correlations between self-reported grades and school-reported grades were found to range from .81 to .86. Table 16 shows that while there was a very slight shift toward higher grades in the 1969 sample, the pattern was essentially the same for both years.

For both of the years studied, slightly over half of the students sampled had grade point averages between 2.01 and 3.00 (that is, between a "C" and a "B"). Over one-quarter of the students had a "C" or lower average, and slightly over 20% had better than a "B" average.

The mean and standard deviation for the 1966 sample was 2.54 and .678, respectively. For the 1969 sample, these statistics were 2.60 and .654, respectively.

ACT Composite Score. The ACT Composite Score is an unweighted average of the separate scores on the four tests which comprise the Assessment: English, mathematics, social studies, and natural sciences. For the 1966 sample the mean Composite Score was 20.76 with a standard deviation of 4.82. For the 1969 sample these statistics were 19.41 and 4.95, respectively. Table 17 shows the distribution of Composite Scores for both of the years studied.

These distributions were substantially the same for both years. However, while it may be considered normal for these distributions to vary slightly from year to year, the observed increase of three percentage points in the lowest category is worthy of comment. The 3-year period encompassed by

TABLE 16

Distribution of High School Grades

Year		High School Grades					Total
		0-2.00	*2.01-2.50*	*2.51-3.00*	*3.01-3.50*	*3.51-4.00*	
1966	N	9,132	8,735	7,632	4,406	2,446	32,351
	%	28.2	27.0	23.6	13.6	7.6	100.0
1969	N	13,489	13,072	12,510	7,115	4,019	50,205
	%	26.9	26.0	24.9	14.2	8.0	100.0

Note.—Letter grades converted to numeric scale where 2.00 = "C", 4.00 = "A".

TABLE 17

Distribution of ACT Composite Scores

Year		ACT Composite Scores 1-15	16-19	20-22	23-25	26-36	Total
1966	N	5,685	8,296	7,651	6,378	4,341	32,351
	%	17.6	25.6	23.6	19.7	13.4	99.9
1969	N	10,300	12,905	10,817	9,140	7,043	50,205
	%	20.5	25.7	21.5	18.2	14.0	99.9

TABLE 18

Distribution of Level of Educational Aspiration

Year		Level of Educational Aspiration Jr. coll. degree	Bachelor's degree	Master's degree	Doctoral degree	Total
1966	N	3,785	17,782	7,585	3,103	32,255
	%	11.7	55.1	23.5	9.6	99.9
1969	N	6,518	26,657	11,562	5,088	49,825
	%	13.1	53.5	23.2	10.2	100.0

this study brought striking increases in the number of junior colleges and in the number of students enrolled in them.[1] An avowed objective of the junior colleges is to encourage attendance by students who view themselves as academic "high-risk" students in terms of the scholastic aptitude and achievement usually associated with beginning a college career. It may be that recent increases in the number of community junior colleges is influencing the plans of enough low-scoring students to cause the indicated increase in percentage of "high-risk" students enrolling in college.

Level of educational aspirations. The students were asked on the SPS to indicate the highest level of education that they expected to complete from a list which included choices from a high school diploma to several choices of doctoral degrees. Table 18 shows the distribution of these responses. Those who indicated a high school diploma as their highest level of educational aspiration were excluded from the calculations. The excluded number constituted less than 2% of the total.

The percentages of students who indicated masters' and doctoral degrees were virtually identical between 1966 and 1969. However, there was a slight shift between 1966 and 1969 for those who indicated junior college and bachelors' degrees. The proportion indicating junior college degrees increased 2%, while those indicating bachelors' degrees decreased about the same amount.

An interesting corollary comparison was afforded between the distribution of level of educational

[1] According to the *1967* and *1970 Junior College Directories*, published by the American Association of Junior Colleges, the total number of junior colleges in the United States increased from 837 in the fall of 1966 to 1,038 in the fall of 1969. Over the same 3-year period, the total number of junior college students increased from 1,464,099 to 2,186,272.

TABLE 19

Comparison of Level of Educational Aspirations and Level of Degrees Awarded

Year			Bachelor's Degree	Master's Degree	Doctoral Degree	Total
1966	Aspiration	N	17,782	7,585	3,103	28,470
		%	62.5	26.6	10.9	100.0
	Awarded	N	524,117	140,772	49,735	714,624
		%	73.3	19.7	7.0	100.0
1969	Aspiration	N	26,657	11,562	5,088	43,307
		%	61.6	26.7	11.7	100.0
	Awarded	N	734,002	194,414	61,870	990,286
		%	74.1	19.6	6.2	99.9

aspirations and the level of degrees actually awarded.[2] Table 19 shows the data on level of educational aspirations from the present study excluding junior college degree aspirants. The exclusion was necessary because the data on level of degrees awarded were available only for bachelors', masters', and doctoral (including first-professional) degrees.

This comparison yields two salient findings. The first is that the distributions of both degrees aspired to and awarded were remarkably constant over the 3-year period. Second, during the same years that the students in the sample were beginning their college careers, the distribution of degrees awarded, on the national level, was consistently lower than the distribution of degrees to which they aspired. While the four samples shown in Table 19 are independent, the data strongly suggest that students entering college as freshmen who aimed higher than a baccalaureate tended to overestimate the level of degree they would obtain.

Type of home community. On the SPS the students were asked, "Which of the following best describes the community that you think of as your hometown during high school days?" Selections were made from a list including the main headings of "farm," "suburb" (with four population size choices), and "central city" (with five population size choices). Table 20 shows the distribution of these responses.

TABLE 20

Distribution of Type of Home Community

Year		Type of Community			
		Rural	*Suburban*	*Urban*	Total
1966	N	9,038	11,315	11,998	32,351
	%	27.9	35.0	37.1	100.0
1969	N	13,810	19,425	16,970	50,205
	%	27.5	38.7	33.8	100.0

While there was little change from 1966 to 1969 in the percentage of those who indicated rural as their home community, the suburban and urban response rates showed counterbalancing shifts. These shifts indicated an increase from suburban areas and a decrease from central city areas and

[2] The data on degrees awarded were taken from reports of annual surveys conducted by the United States Office of Education. These surveys included virtually all degree-granting institutions in the United States. The following publication reported degrees earned during the 12-month period from July 1, 1965, through June 30, 1966: Marjorie O. Chandler and Mabel C. Rice, U.S. Department of Health, Education, and Welfare, U.S. Government Printing Office, Washington, D.C., 1968. The following publication reported degrees earned during the 12-month period from July 1, 1968, through June 30, 1969: Mary Evans Hooper and Marjorie O. Chandler, U.S. Department of Health, Education, and Welfare, U.S. Government Printing Office, Washington, D.C., 1971.

were consistent with well-documented shifts of middle-class families to suburban areas. This socioeconomic class typically has high college attendance rates.

Family income. Each student was also asked on the SPS to estimate his family's total annual income before taxes from a multiple-forced-choice list of eight alternatives ranging from less than $5,000 per year to $25,000 per year and over. Table 21 shows the distribution of these responses.

The percentages of students whose annual family income was less than $5,000 remained stable over the 3-year period. However, the next two categories (from $5,000 to $10,000) showed slight decreases, while all categories from $10,000 and above showed increases. These changes may be more an indication of the general inflationary trend over the 3-year period than changes in the proportion of college-bound students from families in these income brackets.

Age of students. Table 22 shows that the distribution of age in the two samples was markedly different. The distribution of students in the 1969 sample exhibited a wider dispersion of age and a slight shifting toward higher age levels. These differences were probably due to the following factors: (a) The SPS form used in the 1965-66 test year asked, "How old will you be next September 1?" The 1968-69 test year form asked, "How old are you?" (b) The 1969 year included administration of the ACT Assessment to a proportionately larger number of students in the junior year of high school.

Expected part-time employment in college. On the SPS form administered to the 1966 sample each student was asked, "About how many hours

TABLE 21

Distribution of Family Income

		Family Income							
Year		*Less than $5,000*	*$5,000 to 7,499*	*$7,500 to 9,999*	*$10,000 to 14,999*	*$15,000 to 19,999*	*$20,000 to 24,999*	*$25,000 and over*	Total
1966	N	3,680	15,810	5,423	4,995	1,345	577	512	32,351
	%	11.4	48.9	16.8	15.4	4.2	1.8	1.6	100.0
1969	N	5,915	22,336	7,429	9,201	2,955	1,262	1,107	50,205
	%	11.8	44.5	14.8	18.3	5.9	2.5	2.2	100.0

TABLE 22

Distribution of Age

		Age						
Year		*15*	*16*	*17*	*18*	*19*	*20+*	Total
1966	N	190	7,283	20,062	3,413	709	694	32,351
	%	0.7	22.5	62.0	10.5	2.2	2.1	100.0
1969	N	1,701	5,782	28,255	11,085	1,813	1,569	50,205
	%	3.4	11.5	56.3	22.1	3.6	3.1	100.0

do you expect to work part-time while attending college (exclude summer work)?" On this form the student was given the following four choices: "1-9 hours per week," "10-19 hours per week," "20-29 hours per week," and "30+ hours per week."

The SPS form administered to the 1969 sample asked the same question with the same options except for the addition of the option, "Do not expect to work." In preparing these data for the present study, the decision was made to classify nonresponses for the 1966 sample into the category of "Do not expect to work" (shown as "none" in the table). This classification was done on the presumption that the inordinately large number of 1966 nonresponses were comprised mostly of those who did not expect to work but were given no option to so indicate. Table 23 shows the distribution of these responses.

The three highest categories showed a similar distribution between the two years, except for a slight increase in the number of hours per week of expected employment. In view of this similarity and of the stability of nearly all of the other variables over the 3-year period, it must be assumed that the "none" and the "1-9" categories did not accurately reflect the distribution of student responses for the 1966 sample. It is probable that many of the 1966 students responded to the "1-9" category who would otherwise have indicated "none" had that option been available. The increase between 1966 and 1969 in percentage of students expecting to work at least 20 hours per week (14.8% vs. 17.3%, respectively) may be attributable, at least in part, to the increasing cost of higher education (i.e., tuition, books, housing, etc.) and/or the increasing number of commuting students. Commuter students would probably have had more opportunities for employment than resident students would have had.

Extracurricular high school achievements. Both the 1966 and 1969 SPS forms used an identical list of 48 accomplishments or achievements that might have applied to the student's high school years. Each student indicated whether or not each achievement applied to him. The list included a few accomplishments that could have applied to many students (e.g., played a musical instrument); but the list was largely comprised of accomplishments that could be expected to have applied only to a very select few (e.g., was elected to one or more student offices; won literary award or prize for creative writing; or placed first, second, or third in a regional or state science contest). Accordingly, the distribution of such achievements was markedly skewed toward the lower end of a scale comprised of the total frequency of achievements for each student. The 48 achievements were grouped evenly into the following six categories: Leadership, Music, Drama and Speech, Art, Writing, and Science. The distribution of these responses is shown in Table 24.

As would be expected from the type of achievements listed, the largest percentage of students was in the category indicating the lowest number of achievements. There was, however, a marked decrease between 1966 and 1969 in the percentage having the lowest number of achievements. There was a corresponding increase in each of the remaining four higher categories for the 3-year

TABLE 23

Distribution of Expected Part-Time Employment in College

Year		Hours Per Week Employment					
		None	*1-9*	*10-19*	*20-29*	*30+*	**Total**
1966	N	5,469	11,118	10,978	3,560	1,226	32,351
	%	16.9	34.4	33.9	11.0	3.8	100.0
1969	N	17,299	9,017	15,211	6,520	2,158	50,205
	%	34.5	18.0	30.3	13.0	4.3	100.0

TABLE 24

Distribution of Extracurricular High School Achievements

Year		Number of High School Achievements					
		1-5	*6-10*	*11-15*	*16-20*	*21-48*	Total
1966	N	16,675	9,797	4,310	1,215	354	32,351
	%	51.5	30.3	13.3	3.8	1.1	100.0
1969	N	23,248	15,941	7,626	2,566	824	50,205
	%	46.3	31.8	15.2	5.1	1.6	100.0

period. This result may reflect either the expansion of high school extracurricular offerings during the period encompassed by the present study or an increase in the actual selection by colleges of students who took the ACT Assessment and subsequently enrolled in college.

Desirable location as a college choice factor.[3] Examination of Table 25 indicates that the largest shift during the 3-year period for "Desirable Location" was the decrease in responses to "major consideration" and the concomitant increase in responses to "minor consideration." This trend may have been at least partly attributable to the emergence of more out-of-state tuition and fee barriers since freedom of choice based on location alone would have been reduced by such barriers.

Special curriculum desired as a college choice factor. Another factor listed on the SPS form is "Special Curriculum I Wanted." Table 26 shows that there was a slight increase in the importance of special curriculum over the 3-year period. Of the five factors discussed in the present report, special curriculum had the highest percentage of students indicating "major consideration." It was also the only factor with well over half of the responses in the "major consideration" category for both of the years studied.

TABLE 25

Distribution of Responses to Importance of "Desirable Location" as a College Choice Factor

Year		Importance of Desirable Location			
		No importance	*Minor consider-ation*	*Major consider-ation*	Total
1966	N	4,641	10,826	16,884	32,351
	%	14.3	33.5	52.2	100.0
1969	N	7,587	19,219	23,399	50,205
	%	15.1	38.3	46.6	100.0

TABLE 26

Distribution of Responses to Importance of "Special Curriculum Desired" as a College Choice Factor

Year		Importance of Special Curriculum			
		No importance	*Minor consider-ation*	*Major consider-ation*	Total
1966	N	5,803	9,331	17,217	32,351
	%	17.9	28.8	53.3	100.0
1969	N	7,472	15,180	27,553	50,205
	%	14.9	30.2	54.9	100.0

[3]The SPS forms used for both the 1966 and 1969 samples listed a number of factors that might have had an influence on the student's choice of a college. The student was asked to indicate whether each factor was a "major consideration," a "minor consideration," or of "no importance" in influencing his choice of college. Of these, five were selected as variables believed to be important for the present study. Comparisons of these five variables are made in Tables 25 through 29.

Low cost as a college choice factor. In both the 1966 and the 1969 SPS forms, this item was listed as "low cost college." Table 27 shows the distribution of these responses. While one-fifth of the students in both groups indicated this factor was of "no importance," there was a discernible decrease in the 1969 sample in indications of this factor as being of "major consideration." This result may be attributable to the larger number of students living at home while attending college in 1969. Since, to the student and his family, tuition and fees as a cost of college were less important than the savings realized by living at home compared with being a resident student, it follows that commuter students would have less frequently indicated low cost college as a "major consideration." This interpretation is consistent with the emphasis on importance of location of college shown in Table 25.

TABLE 27

Distribution of Responses to Importance of "Low Cost" as a College Choice Factor

Year		Importance of Low Cost: *No importance*	*Minor consideration*	*Major consideration*	Total
1966	N	6,482	13,913	11,956	32,351
	%	20.0	43.0	37.0	100.0
1969	N	10,127	23,086	16,992	50,205
	%	20.2	46.0	33.8	100.0

Offered scholarship as a college choice factor. The 1966 SPS form requested information on the factor "college offered me a scholarship or other financial aid." The 1969 form stated this factor as "offer of scholarship or other financial aid." The distribution of these responses is shown in Table 28. Of the five factors used in this study to determine importance of college choice, "offered scholarship" had the highest percentage indicating this factor as of "no importance" in both 1966 and 1969. There was, however, a marked decrease in percentage of responses indicating this factor as of "no importance" over the 3-year period. This decrease was the largest change exhibited over the 3-year period by any of the five college choice factors studied. There was a corresponding increase in the importance of this factor as a "minor consideration" (3.7% increase) and "major consideration." This result may be due to an increase in students' awareness regarding financial aid possibilities. Since all of the students in this sample were enrolled in college the September following administration of the ACT Assessment, it must be assumed that if the scholarship or other financial aid offered by the college had any significant influence, it was on *where* they would attend rather than *if* they would attend any college.

TABLE 28

Distribution of Responses to Importance of "Offered Scholarship" as a College Choice Factor

Year		Importance of Offered Scholarship: *No importance*	*Minor consideration*	*Major consideration*	Total
1966	N	21,080	5,222	6,049	32,351
	%	65.2	16.1	18.7	100.0
1969	N	27,311	9,958	12,936	50,205
	%	54.4	19.8	25.8	100.0

National reputation as a college choice factor. Both the 1966 and 1969 SPS forms asked for the relative importance of "national reputation of the college" as a factor of influence in the student's choice of a college. Table 29 shows the distribution of these responses.

Overall, national reputation had only a moderate influence on college choice. Slightly over 40% indicated this factor as a "minor consideration" in both 1966 and 1969. The percentage of responses was very similar for both the "no importance" and the "major consideration" categories.

TABLE 29

Distribution of Responses to Importance of "National Reputation" as a College Choice Factor

Year		Importance of National Reputation: *No importance*	*Minor consideration*	*Major consideration*	Total
1966	N	8,601	13,453	10,297	32,351
	%	26.6	41.6	31.8	100.0
1969	N	13,345	21,714	15,146	50,205
	%	26.6	43.3	30.2	100.0

Discussion

The overall impression conveyed by the findings in this study supports the view that recent groups of college-bound high school seniors are quite similar in terms of background characteristics, educational goals, and plans for college life. Data from the two follow-up studies reviewed also indicate that many of the individuals in each group of high school seniors changed their goals and plans, sometimes drastically, while in college.

In aggregate, the studies reviewed suggest that the Student Profile Section of the ACT Assessment has consistently obtained useful information from a wide range of college-bound students since it was first introduced in 1965. As of September 1971, well over five million student records containing SPS information are recorded in ACT's active tape files.

The potential use of SPS information and biographical information, in general, is enhanced by the findings of this study. The student personnel worker who perceives that each incoming crop of freshmen is not dissimilar to those in preceding years now has data to support his personal observation and also his hunch that next year's crop will be quite like the current one. He also now has empirical support for the extensive changes he sees taking place in the educational goals and plans of many college students during the undergraduate years. Personal observations are necessarily a small fragment of the larger picture and, as such, provide limited bases for student personnel and college policies. The data provided in the present study afford a much wider perspective. Most of the findings merely buttress commonly expected views and other available research findings; however, some new or at least uncommon insights are offered. Salient findings and their implications for educational practice are reviewed below.

Males and females who indicated major fields of study in the social, religious, and educational fields, the sciences, the engineering, agriculture, and technology fields, and the arts and humanities fields seem to be fairly sure of their choices. Those who select other majors will likely need more intense educational and/or vocational counseling. With regard to precollege vocational choices, males are generally more stable than females. Holland and Whitney (1968) found that "higher stability appears to be associated with those occupations considered to be most appropriate for each sex [p. 10]." Slightly less than half of both the 2- and 4-year follow-up samples retained their original choice of major field. Despite the fact that females originally were attracted to a much more constricted choice of major fields, their rate of retention of the original choice was much less than the rate for males. In wholesale proportions they abandoned original choices of traditionally "male" majors (e.g., the sciences, business and administration) and gravitated toward social science and educational fields. As might be expected, these findings also generally hold for vocational choice. Collection of the data reviewed in the present study predates the current upsurge of interest in the women's liberation movement, one of the major tenets of which is equal access with men to all academic fields and levels of occupations. A replication of the present study would be most interesting a few years hence. These data provide benchmarks against which to measure possible changes.

The level of education aspired to by the students in all three samples showed interesting patterns of stability and change. In the 2-year sample, aspirations before entering college were at a lower level than those measured at the end of the 2-year college career. As noted previously, the junior college seemed to be accomplishing to some extent

their much publicized purpose of raising the educational goals of those who enter with modest aspirations. Conversely, the 4-year sample showed a downward trend in level of educational aspiration, especially for females.

There was a natural regression effect evident which showed changes from the extremes (e.g., 2-year degrees and PhD's) toward the intermediate degrees of bachelor's and master's.

A corollary comparison of level of educational aspirations and level of degrees actually awarded in the same years studied (1966 and 1969) showed a "cooling-out" effect, that is, the distribution of degrees awarded was markedly lower than the level of degrees to which these 1966 and 1969 national samples aspired. These data predate the current job market situation which advises students that bachelor's and even advanced degrees no longer ensure a job. Thus, it is reasonable to assume that the disparity between degrees to which these students aspired and those awarded is even greater at the present time.

The SPS lists ten goals as possible responses to the question, "What is your most important goal in attending college?" Of these, three consistently account for over 90% of all responses. They are (a) "to secure vocational or professional training," (b) "to develop my mind and intellectual abilities," and (c) "to earn a higher income." The data in this study show not only that the vocational and professional goal has the highest rate of retention of original choice but also that it attracts the largest proportion of those who change their goals during their college career. These data show convincing and persistent evidence that whatever objectives are stated in college catalogs relating to intellectual and cultural growth and personality development, the overwhelming majority want either to secure vocational and professional training or to earn a higher income. Furthermore, as college students are drawn increasingly from lower socioeconomic levels, the trend toward vocationalism in higher education is likely to increase, not decrease. Implications for curriculum development and counseling are obvious and direct. In view of the evidence of what students want from their college experience, it is pertinent to ask whether or not the amount of vocational counseling and job placement typically provided by colleges is appropriate to the wants and needs of students.

The two follow-ups reviewed in this study showed that more than four-fifths of these college students worked at least part time while in college. Of particular interest was the finding that nearly three-fourths of those who had indicated on the SPS that they did not expect to work reported later that they had worked at least part time.

A similar lack of consistency was shown between plans and experiences in students having a car on campus. At the end of the college career an overwhelming majority of the college students in the two follow-ups had cars. This overall majority includes virtually all of those who had indicated on the SPS that they planned to have a car, as well as over two-thirds of the males and over one-third of the females who had *not* originally planned to have a car.

The data regarding employment while in college and having a car on campus indicate that males who report that they do not expect to work while in college and/or that they do not expect to have a car while on campus are, for the large part, being unrealistic. They should be apprised of the fact that, despite plans to the contrary, all but a small minority of males in college have their own cars and/or are employed at least part time before they leave college.

Of all the variables examined in this study, college-related activities have the least consistency between plans and experiences. It was found that the nine activities listed in the SPS were participated in by only a minority of the students who had planned to participate. Very small percentages of those who had not planned to participate actually did so. In the 4-year follow-up, only two of the activities (departmental clubs and intramural athletics) had been participated in by at least half of the students who had indicated 4 years earlier that they planned to participate.

The third study reviewed in this report highlighted the consistency of background characteristics, educational goals, and plans by comparing the 1966 distribution of responses to the 14 SPS items with the 1969 distribution of the same items. A similar consistency was shown between the precollege responses of the two follow-up studies. However, the data collected near the end of the college career in the two follow-ups revealed

that many students drastically altered their goals and plans. From the data it is not possible to ascertain the specific reasons for the changes—even if all the changes are subject to rational explanation. Remember, also, that the follow-up samples included only those who carried through their presumed intention to enter and to *complete* the educational career they started in the college where they first enrolled. Excluded were those who made the most drastic change of all by leaving the college in which they had enrolled before the customary 2- or 4-year period. Some of these probably transferred to other colleges, some may have graduated through acceleration of their programs, but many (perhaps most) dropped out. Thus, the changes recorded here for students in the follow-up studies are probably conservative estimates by virtue of the samples including only those who persisted in the college in which they originally enrolled.

As with any descriptive study, the main findings raise a number of important research questions. To what extent were the changes simply maturational, e.g., did these students find that the list of college-related activities they found so attractive while still in high school prove to be of little interest 3 or 4 years later? To what extent were changes such as in major fields a matter of knowledge and experience with many academic areas acquired while in college? To what extent were changes primarily due to unforeseen circumstances, e.g., might the death of a parent while the student was in college have drastically altered original plans regarding the need for loans, scholarships and working while enrolled in college? To what extent did the changes simply result from inadequate and unrealistic planning and/or knowledge of what to expect in college? To what extent were the changes and accommodations due to shortcomings in the collegiate educational program, counseling, and/or extracurricular programs?

In regard to the last question, student personnel workers may find it possible to infer a link between some of the more drastic changes in students' plans and the need for improved curricula and counseling programs in college. High school counselors may see in these data the need for improved precollege counseling. In any case, it is hoped that the findings described in this report provide information useful to high school and college counselors as they assist students in their planning.

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