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ABSTRACT

The perceived benefits of college as reported by alumni from 55 postsecondary institutions in the United States were surveyed during 1980-1982 using the Alumni Survey of the American College Testing (ACT) Program. Findings were analyzed for the total group of 12,682 and for subgroups based on college size, student sex, student major area, number of years since graduation, and college affiliation. Each of the institutions mailed survey instruments to a sample of recent alumni and later returned the forms to ACT. The median age of the respondents was 27.2 years, with a range of 20 years through over 65 years; 72.3% were from public colleges, while 27.7% were from private institutions. Data were analyzed for 24 areas of personal growth that are often claimed to be outcomes of postsecondary education. The alumni were asked to indicate the degree to which their college educations contributed to their personal growth in each of the 24 areas, which are listed. The data from the study suggest that alumni feel that their college educations have contributed to their personal growth most extensively in such areas as learning on your own, working independently, persisting at difficult tasks, and organizing your time effectively. It is suggested that these outcome areas appear to be related to general learning skills, rather than to specific academic skills or subjects. This finding tends to support the contention that a college education offers more than job training or specific occupational skills. The largest differences between respondent subgroups occurred with regard to college major (e.g., business, education, physical sciences). Six factors that were identified by factor analysis as underlying the 24 outcome variables are compared with the outcome structure recently developed at the National Center for Higher Education Management Systems. The alumni survey and a list of college majors are appended. (SW)

STRUCTURING THE PERCEIVED OUTCOMES OF HIGHER EDUCATION

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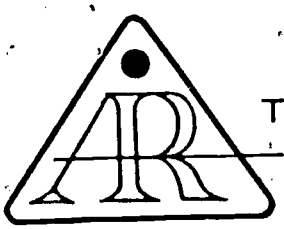

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Second Annual Forum of the Association for Institutional Research held at the Denver Hilton Hotel in Denver, Colorado, May 16-19, 1982. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

D. R. Coleman, Chairman
Forum Publication
Advisory Committee

ABSTRACT

In recent years, colleges have frequently been called on to explore and document the outcomes of their educational programs. Numerous attempts have been made to structure college outcomes, but relatively limited data have been presented to support these outcome models. This paper presents data related to the perceived benefits of college as reported by alumni from a variety of postsecondary institutions across the United States. Data for the study were collected during 1980, 1981, and 1982 using the ACT Alumni Survey instrument. Results are presented for the total group of 12,682 respondents and for subgroups based on college size, student sex, student major area, number of years since graduation, and college affiliation. The observed factor structure is compared and contrasted with an outcome structure recently developed at the National Center for Higher Education Management Systems.

INTRODUCTION

Until recently, the American public tended to accept the value of a postsecondary education without question. College graduates typically obtained high-level jobs, received above average salaries, became leaders in the community, and were generally regarded as "educated" individuals. Since these educational benefits were widely accepted, colleges felt little public pressure to study and document the various outcomes of the educational process.

During the last twenty years, however, a number of economic, political and educational trends have disturbed the public confidence in higher education. Many college graduates have had difficulty in finding employment, and a significant number have accepted jobs with relatively low salaries. The expanded range of postsecondary courses and programs has prompted questions concerning the goals and objectives of higher education. With more individuals attending college, the outcomes of postsecondary education have been receiving increasing critical attention. As a result of these trends, colleges are frequently called on to examine the outcomes of postsecondary education in a more detailed and comprehensive manner.

While various approaches may be utilized in exploring college outcomes, perhaps the most appropriate point at which an institution may begin a study of its educational outcomes is with an examination of the individuals who have completed degrees at the college--the alumni of the institution. By examining the impact college has had on these individuals, institutional personnel may gain valuable information concerning the impact of the programs and services offered at the institution. MacLean (1941) expressed the value of alumni data in the following manner:

> The alumni and ex-students are our product. Only from them can we learn what they got from us, what we did to and for them that was right, wrong, of consequence, of inconsequence, fruitful or wasteful. Only by learning these things can we realize the program of higher education in America so that it may function, be effective, and win continued support. Only thus can we learn what to cut out of present programs and what to put into future ones.

In a more recent paper, Bogue (1975) again emphasized the importance of alumni data: "One of the most valuable sources of data available to colleges and universities on their performance is that provided by former graduates".

Numerous studies of college outcomes, employing various types of alumni data, have been conducted. Toombs (1973) examined the relationships between institutional programs and the employment prospects of recent alumni. In 1976, the Iowa Department of Public Instruction conducted a study to determine employers attitudes regarding the preparation and competency of vocational/technical school graduates. Pace (1941) conducted an extensive alumni survey dealing with job satisfaction, personal experiences, and personal opinions. Kapes (1978) studied the attitudes of employers regarding the competencies of vocational/technical school graduates in Pennsylvania, and concluded that graduates needed more training in the area of personal relations.

In addition to the many alumni-related outcomes studies conducted during the past fifty years, a number of theoretical models of the structure underlying the outcomes of higher education have been developed. The Educational Policies Commission (1938) declared that the principal aims of education were to develop 1) an educated person, 2) an educated producer, 3) an educated consumer, and 4) an educated citizen. Lenning (1974a) noted that there seemed to be three primary categories of college benefits: student benefits, private postgraduate benefits, and societal benefits. Taber and Hackman (1976) provided five general categories of undergraduate college performance including:

1) general academic dimensions; 2) specific academic dimensions, 3) personal dimensions, 4) interpersonal dimensions, and 5) institutional dimensions.

In a review of the literature through 1974, Lenning (1977a) found "over 80 previous attempts to structure educational outcomes and related concepts". Subsequent to this review, Lenning and other members of the National Center for Higher Education Management Systems (NCHEMS) staff developed a comprehensive framework for organizing and classifying information about the full range of postsecondary educational outcomes. This model, referred to as the Outcomes Structure, lists five major categories of educational outcomes (Lenning, 1977b):

- Economic Outcomes--Maintenance or change in economic characteristics and conditions of individuals, groups, organizations, and communities, e.g., in economic access, in economic mobility and independence, in economic security, and in income and standard of living.

- Human Characteristic Outcomes--Maintenance or change in human makeup and characteristics (other than knowledge and understanding) of individuals, groups, organizations, and communities, e.g., aspirations, competence and skills, affective characteristics, perceptual characteristics, physical and physiological characteristics, personality and personal coping characteristics, recognition and certification, and social roles.

- Knowledge, Technology, and Art Form Outcomes--Maintenance or change in the knowledge and understanding, technology, or the art forms and works possessed or mastered by individuals, groups, organizations, and communities, e.g., discoveries and inventions, technical developments, syntheses and reformulations of knowledge, new schools of thought in art and works created in those new traditiona, renovation of art works.

- Resource and Service Provision Outcomes--Maintenance or change in the direct resources and services (other than those included above) provided to individuals, groups, organizations, and communities, e.g., providing facilities, events, advisory assistance, analytic assistance, teaching, health care, and leadership.

- Other Maintenance and Change Outcomes--Examples would be: maintenance or change in the format, arrangement, activity, or administrative operation of an organization or institution; maintenance or change in the aesthetic/cultural level of the local community; maintenance or change in family or community activities, practices, and traditions.

Within each of these major categories, the Outcomes Structure includes many second- and third-level subcategories which provide a detailed outline of specific educational outcomes.

While Lenning's Outcome Structure was developed carefully after an extensive literature review, it was not based on empirical evidence. Indeed, most of the more than 80 outcomes models which Lenning (1977a) reviewed were developed in a logical or theoretical manner and were not based on actual alumni data. The purpose of this paper is to present data from a number of individual alumni studies which examined the outcomes of postsecondary education as perceived by college alumni. The factor structure obtained from analysis of this data is compared and contrasted with the Outcomes Structure model proposed by Lenning, et. al. (1977b).

METHOD

Participants

Data for this paper were collected between January 1, 1980, and April 1, 1982, at 55 colleges and universities located throughout the United States. (Most of the participating institutions were located in the Eastern and Midwestern United States.) These institutions were not selected in a random manner; all institutions that voluntarily used the ACT Alumni Survey during 27-month time period indicated above were included in the study. The 55 colleges and universities included both public and private institutions offering degrees ranging from Associate of Arts through Doctor of Philosophy.

Each institution mailed survey instruments to a sample of its recent alumni, and subsequently returned the forms to ACT for scanning and report preparation. The median response rate obtained by the 55 colleges and universities was approximately 50%. A total of 16,379 alumni records were

obtained in this manner, however, since the records from two institutions accounted for over 30% of the total number, 3089 records were randomly deleted to assure that no individual institution's data represented more than 8% of the total. In addition, 608 records with missing data for the variables of interest were deleted from the study. In this manner, a total of 12,682 alumni records were identified for inclusion in the study.

The alumni that responded to the survey ranged in age from 20 through "over 65" with a median age of 27.2 years. Men constituted 43.9% of the respondents, while women represented 56.1% of the total number. Respondents from public and private institutions accounted for 72.3% and 27.7% of the total sample, respectively. Nearly 89 of the respondents indicated they had been enrolled primarily as full-time students, and 88.8% indicated that they had been classified as "in-state" students.

Instrumentation

All data for the study were obtained using the ACT Alumni Survey (a copy of the instrument is attached to this paper). The instrument is a 4-page, optically scannable questionnaire containing a variety of items dealing with college experiences, employment history, current activities and demographic/background information. The instrument was designed to be administered to recent college alumni, and is intended "to assist postsecondary institutions in collecting alumni data to be used in institutional planning and development". The instrument contains 7 sections including sections for current mailing addresses, comments and suggestions, and additional questions designed by the institution. Without the additional questions the instrument requires approximately 20 minutes to complete. Each instrument was mailed with an institutional cover letter and a self-addressed, postage-paid return envelope.

The section of the instrument dealing with college experiences (Section III, Item I) provided the data presented in this paper. This section lists 24 areas of personal growth which are often claimed to be outcomes of post-secondary education. (These 24 outcome areas are presented in Table 1.) The alumni were asked to indicate the degree to which their college educations contributed to their personal growth in each of the 24 areas. Possible responses included "Very Much", "Somewhat", and "Very Little".

Procedures

Each institution that administered the ACT Alumni Survey identified the alumni to whom the instruments were mailed, conducted the mailing, and undertook any follow-up activities that college personnel elected to employ. The completed instruments were then sent to ACT for scanning and report preparation. The history file containing all alumni records scored by ACT between January 1, 1981, and April 1, 1982, served as the source of data for this study.

Data were analyzed for the total group of respondents and by student major area, type of institution (public vs private), student sex, number of years since graduation, and college size. In particular, the following subgroups of respondents were identified for analysis:

- Business and Commerce Majors N = 1784
- Education Majors N = 3621
- Physical Science Majors (including Biological Science, Mathematics, Chemistry, Physics, Computer Science, Engineering, and other related sciences) N = 1281

- Social Science Majors (including Fine Arts, Applied Arts, Foreign Languages, Letters, Community Services, Social Services, and other related areas) N = 3833
- Health Profession Majors N = 1074
- Public College Alumni N = 9170
- Private College Alumni N = 3512
- Males N = 5558
- Females N = 7099
- Recent Alumni (0-4 years since graduation) N = 7855
- Older Alumni (5 or more years since graduation) N = 4784
- Small College Alumni (less than 5000 students) N = 7291
- Large College Alumni (5000 or more students) N = 5391

Several types of statistical analyses were utilized in the study. Simple rankings of the outcome areas by the percentages of students selecting either the "Very Much" or the "Very Little" response to each area are presented to demonstrate the differences in response patterns for various subgroups of alumni (see Tables 2, 3, and 5 through 11). The χ^2 goodness-of-fit statistic and the test for the difference between two proportions were utilized to determine the level of significance of observed differences among subgroups. The factor structure underlying the 24 outcome areas was explored using a Principal Axes Factor Analysis with interative estimates of the communalities in the reduced correlation matrix. The number of

factors to be retained was determined by including only those factors with eigen-values above 1.0 (additional analyses with varying numbers of factors were also undertaken). The resulting factor pattern matrix was subsequently rotated using the VARIMAX procedure to enable easier interpretation of the results.

RESULTS

Rankings of the 24 outcome areas by the percentages of all respondents indicating that their college educations contributed "Very Much" or "Very Little" to their personal growth in the area, are presented in Tables 2 and 3. The first four outcome areas listed in Table 2 ("Very Much" contribution to personal growth) include Working independently, Learning on your own, Persisting at difficult tasks, and Organizing your time effectively. The outcome areas which respondents felt were least influenced by their college educations (Table 3) included Managing personal/family finances, Understanding consumer issues, Understanding and applying mathematics in your daily activities.

Table 4 presents the average ratings of the 24 outcome areas for all respondents in the study. To determine these average ratings, the "Very Much" response was assigned a value of 3, the "Somewhat" response was coded 2, and the "Very Little" response was coded 1. Since the standard deviations associated with these averages were all approximately .70 and since 12,682 cases were analyzed, any difference of approximately .025 in average rankings is significant at the $\alpha = .01$ level.

Tables 5 and 6 present the rankings of the six highest outcome areas in terms of the percentage of "Very Much" and "Very Little" responses, for each of the five subgroups based on college major. For the Physical Sciences and

Health Profession subgroups, the outcome area with the highest rating was Understanding and applying scientific principles and methods. For the other three subgroups based on college major, the outcome area with the highest rating was Working indepentently. The outcome areas which respondents felt were least influenced by their college educations included Understanding consumer issues (Physical Science Majors), Understanding and applying mathematics in your daily activities (Social Science Majors), Caring for your own physical and mental health (Business Majors), and Managing personal/family finances (Education and Health Profession Majors).

Table 7 presents a summary of the outcome areas with the largest variations by major area in the percentages of respondents indicating that their college educations contributed "Very Much" to their personal growth in the area. All 14 areas listed in the table exhibited major-related differences significant at the .00000001 level. The two areas with the greatest observed differences were Understanding and applying scientific principles and methods and Understanding and applying mathematics in your daily activities.

Tables 8 through 11 present outcome areas with large significant differences between the responses of various subgroups of respondents based on college type (public vs. private), college size, number of years since graduation, and student sex. The differences observed for these subgroups were much smaller in magnitude than those observed for the major-related subgroups, however, all the differences presented in the tables are significant at the .00001 level.

Table 12 presents the six-factor VARIMAX-rotated factor pattern matrix obtained through a Principal Axes Factor Analysis using iterations. The six-factor solution was utilized since six of the factors obtained in the the initial analysis had eigenvalues greater than 1.0. (Five and seven

factor solutions were also examined, but proved more difficult to interpret and were subsequently dropped.) Estimated communalities for the 6-factor solution ranged from .25 for Using the library to .58 for Defining and solving problems, with a median value of approximately .47. Table 13 lists the outcome areas with loadings greater than .45 for each of the six factors identified in the study. In addition to those listed in the table, three other outcome areas had factor loadings in excess of .40: Organizing your time effectively and Planning and carrying out projects loaded .42 and .44 respectively, on Factor 3, while Recognizing your rights, responsibilities, and privileges as a citizen had a factor loading of .42 on Factor 6. It is interesting to note that 21 of the 24 outcome areas included in the study had factor loadings above .45 on one of the six factors. In addition, none of these 21 variables had a high loading on more than one factor. The outcome areas with no loadings above .45 included Using the library, Caring for your own physical and mental health, and Recognizing your rights, responsibilities, and privileges as a citizen.

DISCUSSION AND CONCLUSIONS

The data from the study suggest that alumni of postsecondary institutions feel that their college educations have contributed to their personal growth most extensively in such areas as Learning on your own, Working independently, Persisting at difficult tasks, and Organizing your time effectively. (These results concur with those reported by Valiga (1981) in an earlier study utilizing similar data.) These outcome areas appear to be related to general learning skills, rather than to specific academic skills or subjects. This finding tends to support the contention that a college education offers more than job training or specific occu-

pational skills. (It should be noted, however, that this study only explored perceived educational outcomes reported by college alumni.)

Although significant differences in responses were observed among subgroups based on sex, college major, number of years since graduation, college type, and college size, the largest differences, by far, occured among the subgroups based on college major. For example, the outcome area Understanding and applying scientific principles and methods was the highest rated area for Physical Science and Health Profession Majors, while this outcome area was rated second lowest by Business Majors and fourth lowest by Education and Social Science Majors. Due to these extreme differences, it would seem evident that alumni with varying academic backgrounds have different views concerning the outcomes of their educations.

While significant differences were obtained between subgroups of respondents based on sex, college size, number of years since graduation, and college type, these differences may have been a function of the varying academic major areas represented in each of the subgroups. Further research, controling for differences in major area, is needed in these areas.

The results of the factor analysis appear to indicate that six rather distinct factors underlie the 24 outcome variables analyzed in the study. Variables with high loadings on Factor 1 include Working independently, Persisting at difficult tasks, Learning on your own, and Following directions. This factor, therefore, could be refered to as a "learning skills" factor. The variables with high loadings on Factor 2 deal with scientific principles, applied mathematics, problem solving and graphic information. Factor 2, therefore, appears to be a "scientific/mathematics/problem solving" factor. In the same manner, Factor 3 could be refered to as an "interpersonal skills/group dynamics" factor and Factor 4 appears to be a "humanistic outcomes" factor. Factor 5 appears to be a "basic communication skills"

factor, while Factor 6 could be refered to as a "life skills" factor.

The six factors discussed above do not closely correspond to the five general outcome categories outlined in Lenning (1977b). Lenning's categories appear to encompass a much broader range of educational outcomes than those identified for this study. Indeed, all 24 of the outcome areas included in the ACT Alumni Survey could be classified in Lenning's second and third categories: Human characteristic outcomes and Knowledge, technology, and art form outcomes. Therefore, this study can not approprf-ately address the issue of the validity of Lenning's more comprehensive outcomes model. Never-the-less, The six factors defined in this study do roughly correspond to certain second- and third-level subcategories in Lenning's model:

Factor	Lenning's Corresponding Subcategory
Factor 1 ("learning skills")	• Academic Skills • Intellectual Skills
Factor 2 ("scientific/mathematics/problem solving")	• Research and Scholarship Knowledge and Understanding • Academic Skills
Factor 3 ("interpersonal skills/ group dynamics")	• Interpersonal, Leadership, and Organizational Skills
Factor 4 ("humanistic outcomes")	• Perceptual Characteristics • Attitudes and Values • Art froms and Works
Factor 5 ("basic communication skills")	• Expression and Communication Skills
Factor 6 ("life skills")	• Citizenship Activities and Roles • Citizenship and Family Membership Skills • Social Activities and Roles

The six general factors identified in this study were determined using data for the total sample of 12682 respondents. Due to the large differences in the data for the five subgroups based on college major, separate factor

analyses were conducted for each of these subgroups in an attempt to examine the stability of the observed factor structure for the entire sample. In general, these analyses tended to confirm the orininal 6-factor structure, however, some minor differences were noted:

- For Business and Education Majors, the "learning skills" and "interpersonal skills/group dynamics" factors were less distinct than was the case for the total sample.
- The magnitudes of the factor loadings for the variables loading most heavily on the first two factors ("learning skills" and "scientific/mathematics/problem solving) varied somewhat from those for the total sample.
- The "interpersonal skills/group dynamics" factor observed for the total sample of respondents was not evident in the factor analysis for the Health Profession Majors.
- For the Social Science Majors, the outcome variable Defining and solving problems loaded more heavily on the "interpersonal skills/group dynamics" factor than on the "scientific/mathematics/problem solving" factor. This would seem to indicate that Social Science Majors view problem solving in a different light than do alumni from other major areas (or at least interpreted the survey item in a different manner).

While the six factors identified in this analysis appear relatively stable across major areas (with the exceptions noted above), no factor analyses were conducted for separate subgroups based on sex, college size, number of years since graduation, and college type. Further research in these areas is needed to further clarify the nature of the outcome structure presented in this paper.

Table 1

Areas of Educational Growth Included in the ACT Alumni Survey

1. Writing effectively.
2. Speaking effectively.
3. Understanding written information.
4. Working independently.
5. Managing personal/family finances.
6. Learning on your own.
7. Understanding graphic information.
8. Using the library.
9. Following directions.
10. Understanding consumer issues.
11. Caring for your own physical and mental health.
12. Working cooperatively in a group.
13. Organizing your time effectively.
14. Recognizing your rights, responsibilities, and privileges as a citizen.
15. Planning and carrying out projects.
16. Understanding and applying mathematics in your daily activities.
17. Understanding different philosophies and cultures.
18. Persisting at difficult tasks.
19. Defining and solving problems.
20. Understanding the interaction of man and the environment.
21. Leading/guiding others.
22. Recognizing assumptions, and making logical inferences, and reaching correct conclusions.
23. Understanding and appreciating the arts.
24. Understanding and applying scientific principles and methods.

Table 2

Percentage of all respondents indicating that their college educations contributed "Very Much" to their personal growth in each outcome area.

% "Very Much"	Outcome Area
54.6	Working independently.
51.9	Learning on your own.
45.3	Persisting at difficult tasks.
43.4	Organizing your time effectively.
41.5	Planning and carrying out projects.
40.8	Defining and solving problems.
40.8	Understanding written information.
40.4	Working cooperatively in a group.
38.2	Using the library.
35.5	Leading/guiding others.
34.9	Recognizing assumptions, and making logical inferences, and reaching correct conclusions.
34.7	Understanding different philosophies and cultures.
32.3	Writing effectively.
31.8	Speaking effectively.
30.8	Understanding and appreciating the arts.
30.3	Following directions.
29.0	Caring for your own physical and mental health.
28.0	Understanding the interaction of man and the environment.
27.2	Understanding and applying scientific principles and methods.
21.2	Recognizing your rights, responsibilities, and privileges as a citizen.
20.7	Understanding graphic information.
17.6	Managing personal/family finances.
15.8	Understanding and applying mathematics in your daily activities.
13.8	Understanding consumer issues.

Table 3

Percentage of all respondents indicating that their college educations contributed "Very Little" to their personal growth in each outcome area.

% "Very Little"	Outcome Area
49.6	Managing personal/family finances.
49.2	Understanding consumer issues.
48.6	Understanding and applying mathematics in your daily activities.
36.6	Recognizing your rights, responsibilities, and privileges as a citizen.
34.9	Caring for your own physical and mental health.
30.8	Understanding and applying scientific principles and methods.
30.4	Understanding graphic information.
30.4	Understanding and appreciating the arts.
28.1	Understanding the interaction of man and the environment.
23.7	Understanding different philosophies and cultures.
22.9	Following directions.
20.7	Leading/guiding others.
19.8	Using the library.
18.9	Writing effectively.
18.0	Speaking effectively.
15.4	Organizing your time effectively.
14.8	Working cooperatively in a group.
14.5	Recognizing assumptions, and making logical inferences, and reaching correct conclusions.
12.6	Persisting at difficult tasks.
12.3	Planning and carrying out projects.
11.9	Understanding written information.
11.5	Defining and solving problems.
11.4	Working independently.
10.8	Learning on your own.

Table 4

Average ratings of college outcome areas for all respondents.

("Very Much" = 3, "Somewhat" = 2, "Very Little" = 1)

Average Rating	Outcome Area
2.433	Working independently.
2.411	Learning on your own.
2.327	Persisting at difficult tasks.
2.293	Defining and solving problems.
2.292	Planning and carrying out projects.
2.289	Understanding written information.
2.280	Organizing your time effectively.
2.256	Working cooperatively in a group.
2.204	Recognizing assumptions, and making logical inferences, and reaching correct conclusions.
2.184	Using the library.
2.148	Leading/guiding others.
2.138	Speaking effectively.
2.135	Writing effectively.
2.110	Understanding different philosophies and cultures.
2.074	Following directions.
2.005	Understanding and appreciating the arts.
1.999	Understanding the interaction of man and the environment.
1.964	Understanding and applying scientific principles and methods.
1.941	Caring for your own physical and mental health.
1.903	Understanding graphic information.
1.846	Recognizing your rights, responsibilities, and privileges as a citizen.
1.680	Managing personal/family finances.
1.672	Understanding and applying mathematics in your daily activities.
1.646	Understanding consumer issues.

Table 5

Outcome areas with the highest percentages of respondents indicating that their college educations contributed "Very Much" to their personal growth in the area by college major.

BUSINESS MAJORS

% "Very Much"	Outcome Area
52.5	Working independently.
49.9	Learning on your own.
44.3	Defining and solving problems.
39.7	Understanding written information.
39.6	Organizing your time effectively.
39.3	Persisting at difficult tasks.

EDUCATION MAJORS

% "Very Much"	Outcome Area
53.5	Working independently.
50.7	Learning on your own.
45.8	Organizing your time effectively.
45.4	Planning and carrying out projects.
45.3	Working cooperatively in a group.
43.1	Leading/guiding others.

PHYSICAL SCIENCE MAJORS

% "Very Much"	Outcome Area
67.1	Understanding and applying scientific principles and methods.
59.0	Working independently.
55.6	Defining and solving problems.
55.0	Learning on your own.
51.8	Persisting at difficult tasks.
47.3	Recognizing assumptions, and making logical inferences, and reaching correct conclusions.

Table 5 (continued)

Outcome areas with the highest percentages of respondents indicating that their college educations contributed "Very Much" to their personal growth in the area by college major.

SOCIAL SCIENCE MAJORS

% "Very Much"	Outcome Area
56.0	Working independently.
52.7	Learning on your own.
48.3	Understanding different philosophies and cultures.
47.2	Persisting at difficult tasks.
44.8	Understanding written information.
42.8	Planning and carrying out projects.

HEALTH PROFESSION MAJORS

% "Very Much"	Outcome Area
57.4	Understanding and applying scientific principles and methods.
56.6	Working independently.
54.0	Learning on your own.
50.3	Persisting at difficult tasks.
48.3	Organizing your time effectively.
47.7	Defining and solving problems.

Table 6

Outcome areas with the highest percentages of respondents indicating that their college educations contributed "Very Little" to their personal growth in the area by college major.

BUSINESS MAJORS

% "Very Little"	Outcome Area
44.0	Caring for your own physical and mental health.
43.9	Understanding and appreciating the arts.
37.2	Recognizing your rights, responsibilities, and privileges as a citizen.
35.7	Understanding the interaction of man and the environment.
34.4	Understanding and applying scientific principles and methods.
32.5	Understanding different philosophies and cultures.

EDUCATION MAJORS

% "Very Little"	Outcome Area
54.2	Managing personal/family finances.
53.9	Understanding consumer issues.
53.5	Understanding and applying mathematics in your daily activities.
36.3	Understanding graphic information.
36.1	Understanding and applying scientific principles and methods.
33.9	Recognizing your rights, responsibilities, and privileges as a citizen.

Table 6 (continued)

Outcome areas with the highest percentages of respondents indicating that their college educations contributed "Very Little" to their personal growth in the area by college major.

PHYSICAL SCIENCE MAJORS

% "Very Little"	Outcome Area
57.5	Understanding consumer issues.
46.2	Managing personal/family finances.
39.4	Recognizing your rights, responsibilities, and privileges as a citizen.
34.7	Caring for your own physical and mental health.
30.0	Understanding and appreciating the arts.
25.5	Leading/guiding others.

SOCIAL SCIENCE MAJORS

% "Very Little"	Outcome Area
65.6	Understanding and applying mathematics in your daily activities.
55.9	Managing personal/family finances.
52.7	Understanding consumer issues.
41.5	Understanding and applying scientific principles and methods.
36.4	Caring for your own physical and mental health.
34.0	Recognizing your rights, responsibilities, and privileges as a citizen.

HEALTH PROFESSION MAJORS

% "Very Little"	Outcome Area
59.4	Managing personal/family finances.
56.6	Understanding consumer issues.
54.3	Understanding and appreciating the arts.
46.2	Recognizing your rights, responsibilities, and privileges as a citizen.
43.1	Understanding and applying mathematics in your daily activities.
42.6	Understanding different philosophies and cultures.

Table 7

Outcome Areas with the largest variation* by major area in the percent of respondents indicating that their college educations contributed "Very Much" to their personal growth in the area.

Outcome Area	Business	Education	Physical Sciences	Social Sciences	Health Profession
Understanding and applying scientific principles and methods.	17.0	17.6	67.1	15.8	57.4
Understanding and applying mathematics in your daily activities.	27.2	10.2	39.7	6.6	15.5
Understanding and appreciating the arts.	17.4	34.2	25.7	42.5	12.8
Understanding consumer issues.	30.9	10.1	8.1	12.5	7.7
Understanding different philosophies and cultures.	25.2	32.4	30.9	48.3	19.3
Managing personal/family finances.	35.5	14.6	17.5	13.3	11.9
Writing effectively.	33.1	30.1	25.4	41.2	19.8
Understanding graphic information.	22.5	13.9	34.3	19.9	22.9
Caring for your own physical and mental health.	19.2	30.7	27.4	26.7	45.4
Defining and solving problems.	44.3	33.3	55.6	39.7	47.7
Leading/guiding others.	27.0	43.1	30.0	37.0	30.1
Speaking effectively.	27.7	34.6	25.6	37.4	19.6
Understanding the interaction of man and the environment.	18.8	25.3	32.5	33.8	24.9
Recognizing assumptions, and making logical inferences, and reaching correct conclusions.	35.5	27.9	47.3	36.9	37.5
TOTAL FREQUENCIES	1784	3621	1280	3833	1074

*All differences in percentages for various major areas are significant at the .00000001 level using a χ^2 goodness of fit significance test.

Table 8

Outcome areas with large significant differences* between the percentages of public college respondents and private college respondents indicating that their college educations contributed "Very Much" to their personal growth in the area.

Outcome Area	Public Colleges	Private Colleges
Understanding different philosophies and cultures.	29.6	48.1
Understanding and appreciating the arts.	26.9	41.1
Understanding and applying mathematics in your daily activities.	17.2	12.2
Speaking effectively.	29.2	38.4
Writing effectively.	30.0	38.5
Persisting at difficult tasks.	43.0	51.3
Leading/guiding others.	33.3	41.4
Understanding consumer issues.	14.8	11.3
TOTAL FREQUENCIES	9170	3512

*All differences in percentages are significant at the .00001 level.

Table 9

Outcome areas with large significant differences* between the percentages of small college respondents and large college respondents indicating that their college educations contributed "Very Little" to their personal growth in the area.

Outcome Area	Small Colleges	Large Colleges
Understanding consumer issues.	53.4	43.4
Understanding the interaction of man and the environment.	31.0	24.2
Using the library.	21.8	17.2
Managing personal/family finances.	52.7	45.3
Understanding and appreciating the arts.	32.9	27.0
TOTAL FREQUENCIES	7291	5391

*All differences in percentages are significant at the .00001 level.

Table 10

Outcome areas with large significant differences* between the percentages of recent alumni and older alumni indicating that their college educations contributed "Very Much" to their personal growth in the area.

Outcome Area	Recent Alumni	Older Alumni
Understanding consumer issues.	16.4	9.5
Managing personal/family finances.	19.7	14.0
Defining and solving problems.	43.0	37.2
Understanding the interaction of man and the environment.	30.3	24.3
TOTAL FREQUENCIES	7855	4784

*All differences in percentages are significant at the .00001 level.

Table 11

Outcome areas with large significant differences* between the percentages of males and females indicating that their college educations contributed "Very Much" to their personal growth in the area.

Outcome Area	Males	Females
Understanding and applying mathematics in your daily activities.	20.4	12.3
Understanding and applying scientific principles and methods.	32.4	23.0
Understanding and appreciating the arts.	26.3	34.3
Organizing your time effectively.	37.7	48.0
Understanding graphic information.	24.8	17.5
Planning and carrying out projects.	36.6	45.2
Working cooperatively in a group.	36.4	43.5
TOTAL FREQUENCIES	5558	7099

*All differences in percentages are significant at the .00001 level.

Table 12

VARIMAX ROTATED FACTOR MATRIX

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Outcome Area 1*	0.14974	0.09474	0.06560	0.20728	0.65127	0.05015
Outcome Area 2	0.10368	0.05796	0.26244	0.15709	0.63669	0.11664
Outcome Area 3	0.38555	0.26625	0.06079	0.13610	0.50073	0.14698
Outcome Area 4	0.63657	0.11631	0.20533	0.05736	0.14174	0.14993
Outcome Area 5	0.24518	0.12369	0.14167	0.02117	0.07190	0.51333
Outcome Area 6	0.63050	0.12908	0.17122	0.11199	0.07060	0.19867
Outcome Area 7	0.31704	0.48892	-0.03719	0.10466	0.12606	0.23376
Outcome Area 8	0.35734	0.14998	0.01517	0.20074	0.19487	0.14234
Outcome Area 9	0.52859	0.21366	0.18543	0.07457	0.19696	0.27041
Outcome Area 10	0.10195	0.22257	0.08065	0.17742	0.12186	0.54056
Outcome Area 11	0.20159	0.08700	0.38478	0.15264	0.02387	0.37648
Outcome Area 12	0.32384	0.05505	0.54938	0.09910	0.12116	0.23793
Outcome Area 13	0.47361	0.12595	0.41772	0.07209	0.07914	0.17157
Outcome Area 14	0.17550	0.09765	0.31505	0.35407	0.10252	0.42463
Outcome Area 15	0.47185	0.17719	0.44265	0.16704	0.13394	0.09736
Outcome Area 16	0.12755	0.54598	0.05540	-0.03993	0.06590	0.35071
Outcome Area 17	0.07011	0.11937	0.09206	0.69165	0.15970	0.06832
Outcome Area 18	0.49516	0.30722	0.36386	0.19904	0.11273	-0.06432
Outcome Area 19	0.36601	0.52988	0.36057	0.16163	0.11782	0.00591
Outcome Area 20	0.09681	0.25455	0.24847	0.51478	0.10536	0.20527
Outcome Area 21	0.14350	0.12047	0.54647	0.20303	0.20485	0.12161
Outcome Area 22	0.19498	0.51048	0.32509	0.21644	0.19006	0.05488
Outcome Area 23	0.14207	0.01605	0.10078	0.54434	0.15107	0.06074
Outcome Area 24	0.07525	0.60390	0.07112	0.11147	0.04027	0.09108

*Refer to Table 1 for Outcome Area descriptions.

Table 13

Areas of Educational Growth with Factor Loadings Greater than .45. (VARIMAX rotated factor matrix)

FACTOR 1	
.64	Working independently.
.63	Learning on your own.
.53	Following directions.
.50	Persisting at difficult tasks.
.47	Organizing your time effectively.
.47	Planning and carrying out projects.
FACTOR 2	
.60	Understanding and applying scientific principles and methods.
.55	Understanding and applying mathematics in your daily activities.
.53	Defining and solving problems.
.51	Recognizing assumptions, and making logical inferences, and reaching correct conclusions.
.49	Understanding graphic information.
FACTOR 3	
.55	Working cooperatively in a group.
.55	Leading/guiding others.

(Based on responses of 12,682 college alumni.)

Table 13 (continued)

Areas of Educational Growth with Factor Loadings Greater than .45. (VARIMAX rotated factor matrix)

FACTOR 4	
.69	Understanding different philosophies and cultures.
.54	Understanding and appreciating the arts.
.51	Understanding the interaction of man and the environment.
FACTOR 5	
.65	Writing effectively.
.64	Speaking effectively.
.50	Understanding written information.
FACTOR 6	
.54	Understanding consumer issues.
.51	Managing personal/family finances.

(Based on responses of 12,682 college alumni.)

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MAKE NO STRAY MARKS ON THIS FORM

SECTION V—ADDITIONAL QUESTIONS

If an additional set of multiple-choice questions is included with this form, please use this section to record your responses. Twelve ovals are provided for each question, but few questions require that many choices. Simply ignore the extra ovals. If no additional questions are enclosed, leave this section blank.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

SECTION VI—MAILING ADDRESSES

PLEASE PRINT YOUR NAME AND CURRENT ADDRESS ON THE LINES PROVIDED BELOW.

First Name MI Maiden Name Last Name

Street Address P.O. Box

City

State Zip Code

PLEASE PRINT THE NAME AND ADDRESS OF SOMEONE WHO CAN FORWARD MAIL TO YOU, SHOULD YOU MOVE.

Name

Street Address P.O. Box

City

State Zip Code

PLEASE PRINT YOUR CURRENT BUSINESS ADDRESS ON THE LINES PROVIDED BELOW.

Name of Organization

Street Address P.O. Box

City

State Zip Code

SECTION VII—COMMENTS AND SUGGESTIONS

If you wish to make any comments or suggestions concerning this college, please use the lines provided below.

DO NOT WRITE BELOW THIS LINE.

PAGE 2 38 · DO NOT TEAR OR STAPLE THIS FORM

SECTION III—COLLEGE EXPERIENCES

Please complete each of the following questions related to your education at this college.

A INDICATE YOUR RATING OF THIS COLLEGE AT THE TIME YOU APPLIED FOR ADMISSION

- O It Was My First Choice
- O It Was My Second Choice
- O It Was My Third Choice
- O It Was My Fourth Choice or Lower

B IF YOU COULD START COLLEGE OVER, WOULD YOU CHOOSE TO ATTEND THIS COLLEGE?

- O Definitely Yes
- O Probably Yes
- O Uncertain
- O Probably No
- O Definitely No

C IF YOU COULD START COLLEGE OVER, WOULD YOU CHOOSE TO GRADUATE WITH THE SAME MAJOR?

- O Definitely Yes
- O Probably Yes
- O Uncertain
- O Probably No
- O Definitely No

D HOW WOULD YOU COMPARE THE QUALITY OF EDUCATION PROVIDED AT THIS COLLEGE WITH THAT OF OTHER COLLEGES?

- O Better
- O About the Same
- O Worse
- O Unable to Judge

E REGARDLESS OF THE FINANCIAL BENEFITS, HAS YOUR COLLEGE EDUCATION IMPROVED THE QUALITY OF YOUR LIFE?

- O Definitely Yes
- O Probably Yes
- O Uncertain
- O Probably No
- O Definitely No

F WHAT WAS YOUR PRIMARY REASON FOR ATTENDING THIS COLLEGE? (Blacken Only ONE Oval)

- O Cost
- O Admissions Standards
- O Size
- O Social Atmosphere
- O Location
- O Type of Programs Available
- O Academic Reputation
- O Availability of Scholarship or Financial Aid
- O Advice of Parents or Relatives
- O Advice of High School Personnel
- O To Be with Friends
- O Other

G INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR SOURCE, MINOR SOURCE, OR NOT A SOURCE OF FUNDS FOR YOUR COLLEGE EDUCATION

MAJOR SOURCE	MINOR SOURCE	NOT A SOURCE	
O	O	O	Parents or Relatives
O	O	O	Personal Savings
O	O	O	Summer Employment
O	O	O	Employment at College
O	O	O	Spouse
O	O	O	VA Benefits
O	O	O	Social Security Benefits
O	O	O	Student Loans (NDSL, etc.)
O	O	O	Scholarships
O	O	O	Educational Grants (BEOG, SEOG, etc.)

H RATE EACH OF THE FOLLOWING ALUMNI ASSOCIATION PROGRAMS AND SERVICES AT THIS COLLEGE

VERY GOOD	FAIR	POOR	NO OPINION	DOES NOT APPLY	
O	O	O	O	O	Publications
O	O	O	O	O	Homecoming Activities
O	O	O	O	O	Fund Raising Programs
O	O	O	O	O	Chapter Meetings
O	O	O	O	O	Tour Programs

I HOW MUCH DID YOUR EDUCATION AT THIS COLLEGE CONTRIBUTE TO YOUR PERSONAL GROWTH IN EACH OF THE FOLLOWING AREAS?

39

VERY MUCH	SOMEWHAT	VERY LITTLE	
O	O	O	1. Writing effectively
O	O	O	2. Speaking effectively
O	O	O	3. Understanding written information
O	O	O	4. Working independently
O	O	O	5. Managing personal/family finances
O	O	O	6. Learning on your own
O	O	O	7. Understanding graphic information
O	O	O	8. Using the library
O	O	O	9. Following directions
O	O	O	10. Understanding consumer issues
O	O	O	11. Caring for your own physical and mental health
O	O	O	12. Working cooperatively in a group
O	O	O	13. Organizing your time effectively
O	O	O	14. Recognizing your rights, responsibilities, and privileges as a citizen
O	O	O	15. Planning and carrying out projects
O	O	O	16. Understanding and applying mathematics in your daily activities
O	O	O	17. Understanding different philosophies and cultures
O	O	O	18. Persisting at difficult tasks
O	O	O	19. Defining and solving problems
O	O	O	20. Understanding the interaction of man and the environment
O	O	O	21. Leading/guiding others
O	O	O	22. Recognizing assumptions, and making logical inferences, and reaching correct conclusions
O	O	O	23. Understanding and appreciating the arts
O	O	O	24. Understanding and applying scientific principles and methods

PAGE 3

USE A SOFT LEAD PENCIL ONLY

SECTION IV—EMPLOYMENT HISTORY

Please respond to the following questions related to your employment since you graduated from this college. Complete only the parts of this section that apply to you.

PART A: TO BE COMPLETED BY ALL ALUMNI

A WHICH OF THE FOLLOWING BEST DESCRIBES WHAT YOU ARE CURRENTLY DOING? (Blacken Only ONE Oval)

- Employed Full-Time
- Employed Part-Time
- Self-Employed (Farmer or Business Owner, etc.)
- Serving in the Armed Forces
- Continuing My Education
- Employed and Continuing My Education
- Caring for a Home/Family
- Unemployed
- Other

PART B: COMPLETE THE FOLLOWING QUESTIONS ONLY IF YOU HAVE EVER HELD A *FULL-TIME* JOB SINCE GRADUATING FROM THIS COLLEGE

B FROM WHICH SOURCE DID YOU LEARN ABOUT THE FIRST JOB YOU HELD AFTER GRADUATING FROM THIS COLLEGE? (Blacken Only ONE Oval)

- College Placement Office
- College Counselor/Adviser
- Faculty at the College
- Parent or Relative
- Newspaper/Trade Publication
- Professional Meeting
- Another Student/Friend
- Recruited by Employer
- Public/Private Employment Agency
- Other

C INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR PROBLEM, MINOR PROBLEM, OR NOT A PROBLEM IN OBTAINING YOUR FIRST JOB AFTER GRADUATION

MAJOR PROBLEM / MINOR PROBLEM / NOT A PROBLEM

- Deciding What I Wanted to Do
- Knowing How to Find Job Openings
- Interviewing Interviews
- Writing a Resume, Vita, or Letter of Introduction
- Finding a Job That Paid Enough
- Completing Job Applications
- Finding a Job for Which I Was Trained
- Finding a Job Where I Wanted to Live
- Finding the Kind of Job I Wanted
- Race/Sex Discrimination

D WHAT WAS YOUR ANNUAL SALARY/INCOME IN THE FIRST JOB YOU HELD AFTER COLLEGE?

- Less than $6,000
- $6,000 to $8,999
- $9,000 to $11,999
- $12,000 to $14,999
- $15,000 to $17,999
- $18,000 to $20,999
- $21,000 to $23,999
- $24,000 to $26,999
- $27,000 to $29,999
- $30,000 to $39,999
- $40,000 to $50,000
- Over $50,000

PART B: CONTINUED

E HOW LONG DID IT TAKE YOU TO OBTAIN YOUR FIRST FULL-TIME JOB AFTER LEAVING THIS COLLEGE?

- Obtained the Job Prior to Leaving College
- Less Than One Month
- 1 to 3 Months
- 4 to 6 Months
- 7 to 12 Months
- Over 12 Months

F INDICATE THE NUMBER OF FULL-TIME JOBS YOU HAVE HELD SINCE LEAVING THIS COLLEGE

- 1
- 2
- 3
- 4
- 5 or More

PART C: COMPLETE THESE QUESTIONS ONLY IF YOU ARE *CURRENTLY UNEMPLOYED*

G INDICATE THE PRIMARY REASON YOU ARE NOW UNEMPLOYED

- Have Been Unable to Find a Full-Time Job Since College
- Was Laid Off by Employer
- Quit to Find Another Job
- Health/Personal Reasons
- Do Not Desire Employment at This Time
- Other

H HOW LONG HAVE YOU ACTIVELY BEEN SEEKING EMPLOYMENT?

- Not Seeking Employment
- Less Than 1 Month
- 1 to 3 Months
- 4 to 6 Months
- 7 to 12 Months
- Over 12 Months

I HAVE YOU SOUGHT HELP FROM THIS COLLEGE'S PLACEMENT OFFICE?

- Yes, It Has Been Helpful
- Yes, but It Has Not Been Helpful
- No

PART D: COMPLETE THESE QUESTIONS ONLY IF YOU ARE *CURRENTLY EMPLOYED*

J INDICATE YOUR CURRENT OCCUPATION

Use the List of College Majors and Occupational Choices to indicate your current occupation

K WHAT IS YOUR CURRENT ANNUAL SALARY/INCOME?

- Less than $6,000
- $6,000 to $8,999
- $9,000 to $11,999
- $12,000 to $14,999
- $15,000 to $17,999
- $18,000 to $20,999
- $21,000 to $23,999
- $24,000 to $26,999
- $27,000 to $29,999
- $30,000 to $39,999
- $40,000 to $50,000
- Over $50,000

L HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR PRESENT OCCUPATION?

- Very Well
- Adequately
- Poorly
- Not at All

M HOW CLOSELY RELATED IS YOUR CURRENT OCCUPATION TO YOUR MAJOR AT THIS COLLEGE?

- Highly Related
- Moderately Related
- Slightly Related
- Not Related

N DO YOU FEEL YOU ARE CURRENTLY UNDEREMPLOYED?

- Yes
- No

O INDICATE YOUR SATISFACTION WITH THE FOLLOWING ASPECTS OF YOUR PRESENT JOB

VERY SATISFIED / SATISFIED / NEUTRAL / DISSATISFIED / VERY DISSATISFIED

- Challenge
- Location
- Salary and Benefits
- Advancement Potential
- Working Conditions
- Career Potential

07366-003

ALUMNI SURVEY

DIRECTIONS: The information you supply on this questionnaire will be kept completely confidential. However, if any item requests information that you do not wish to provide, please feel free to omit it. Your Social Security number is requested for research purposes only and will not be listed on any report.

Please use a soft (No. 1 or 2) lead pencil to fill in the oval indicating your response. DO NOT use a ball-point pen, nylon-tip or felt-tip pen, fountain pen, marker, or colored pencil. Some items may not be applicable to you or to this college. If this is the case, skip the item or mark the "Does Not Apply" option. If you wish to change your response to an item, erase your first mark completely and then blacken the correct oval. Do not mark more than ONE response per item unless you are instructed to do so.

PAGE 1

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SECTION I—BACKGROUND INFORMATION

Begin by writing your Social Security number in the large boxes at the top of Block A. Then, in the column below each box, blacken the appropriate oval. Complete the remaining blocks by blackening the single most appropriate oval in each case.

A SOCIAL SECURITY NUMBER (Identification Number)

B AGE
- 20 or under
- 21 or 22
- 23 or 24
- 25 or 26
- 27 to 29
- 30 to 39
- 40 to 61
- 62 or over

C RACIAL/ETHNIC GROUP
- Afro-American/Black
- American Indian or Alaskan Native
- Caucasian-American/White
- Mexican-American/Chicano
- Asian-American, Oriental, or Pacific Islander
- Puerto Rican, Cuban, or Other Hispanic Origin
- Other
- Prefer Not to Respond

D HOW MANY YEARS HAS IT BEEN SINCE YOU GRADUATED FROM THIS COLLEGE? (To the Nearest Year)
- Less Than 1 Year
- 1 Year
- 2 Years
- 3 Years
- 4 Years
- 5 to 9 Years
- 10 or More Years

E INDICATE THE HIGHEST DEGREE YOU NOW HOLD
- Associate Degree
- Bachelor's Degree
- Master's Degree
- Doctor's Degree
- Professional Degree
- Other

F INDICATE YOUR MAJOR AT THIS COLLEGE

Using the List of College Majors and Occupational Choices included with this questionnaire, find the 3-digit code for your college major, write it in the boxes above, and then blacken the appropriate oval in the column below each box.

G SEX
- Male
- Female

H WHAT WAS YOUR PRIMARY ENROLLMENT STATUS AT THIS COLLEGE?
- Full-Time Student
- Part-Time Student

I WERE YOU MARRIED AT THE TIME YOU ATTENDED THIS COLLEGE?
- Yes
- No

J WHAT WAS YOUR RESIDENCE CLASSIFICATION AT THIS COLLEGE?
- In-State Student
- Out-of-State Student
- International Student (Not U.S. Citizen)

K HOW MANY YEARS DID YOU ATTEND THIS COLLEGE? (To the Nearest Year)
- 1 Year
- 2 Years
- 3 Years
- 4 Years
- 5 or More Years

L WHERE DO YOU CURRENTLY LIVE?
- In the State in Which This College Is Located
- In Another State or Country

M DO YOU PLAN TO ATTEND THIS COLLEGE IN THE FUTURE?
- Yes
- Undecided
- No

SECTION II—CONTINUING EDUCATION

Complete this section **only** if you have continued your formal education since graduating from this college. If you have not, skip to Section III.

A WHAT IS THE MAJOR REASON YOU CONTINUED YOUR EDUCATION? (Mark Only ONE Oval)
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- Other

B MAJOR AREA OF STUDY SINCE GRADUATING FROM THIS COLLEGE

Use the List of College Majors and Occupational Choices to find the code for your current or most recent area of study.

C HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR CONTINUING EDUCATION?
- Exceptionally Well
- More Than Adequately
- Adequately
- Less Than Adequately
- Very Poorly

D WHAT IS THE HIGHEST DEGREE YOU PLAN TO OBTAIN?
- Associate Degree
- Bachelor's Degree
- Master's Degree
- Doctor's Degree
- Professional Degree
- Other
- I Do Not Plan to Obtain Another Degree

E HOW MANY CREDIT HOURS HAVE YOU EARNED SINCE GRADUATING FROM THIS COLLEGE?
- [illegible] or Fewer
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- Over [illegible]
- I Am Not Taking Courses for Credit

F WHAT HAS BEEN YOUR PRIMARY ENROLLMENT STATUS DURING YOUR CONTINUING EDUCATION?
- Full-Time Student
- Part-Time Student

LIST OF COLLEGE MAJORS AND OCCUPATIONAL CHOICES

Since we could not list all possible occupations and programs of study, you may not be able to find an exact description of the one that applies to you. If that is the case, you should select a general area—for example, 100 (Agricultural Fields), 200 (Engineering Fields), 220 (Fine and Applied Arts).

If you are completely undecided about your answer, mark 000.

000 Undecided

100 **AGRICULTURE**, general
101 Agricultural Business
102 Agricultural Economics
103 Agricultural and Farm Management (farming and ranching)
104 Agriculture, Forestry, and Wildlife Technologies
105 Agronomy (field crops and crop management)
106 Animal Science (husbandry)
107 Fish, Game, and Wildlife Management
108 Food Science and Technology
109 Forestry
110 Horticulture/Ornamental Horticulture
111 Natural Resources Management (soil conservation)

120 **ARCHITECTURE**, general
121 Architecture Technology
122 City, Community, and Regional Planning
123 Environmental Design, general
124 Interior Design
125 Landscape Architecture

130 **BIOLOGICAL SCIENCES**, general
131 Biology
132 Biochemistry
133 Botany
134 Ecology
135 Microbiology
136 Zoology

140 **BUSINESS AND COMMERCE**, general
141 Accounting
142 Banking and Finance
143 Business Economics
144 Business Management and Administration
145 Food Marketing
146 Hotel and Restaurant Management
147 Labor and Industrial Relations
148 Office Management
149 Marketing and Purchasing (sales and retailing)
150 Real Estate and Insurance
151 Recreation and Tourism
152 Secretarial Studies
153 Transportation and Public Utilities

160 **COMMUNICATIONS**, general
161 Journalism
162 Radio/Television (related to broadcasting)
163 Advertising
164 Library Science

170 **COMPUTER AND INFORMATION SCIENCES**, general
171 Computer Programming
172 Information Systems and Sciences
173 Systems Analysis
174 Data Processing Technology
175 Computer Operating
176 Data Systems Repair

180 **EDUCATION**, general
181 Agricultural Education
182 Art Education
183 Business, Commerce, and Distributive Education
184 Educational Administration
185 Elementary Education
186 English Education
187 Home Economics Education
188 Industrial Arts, Vocational/Technical Education
189 Mathematics Education
190 Music Education
191 Physical Education
192 Postsecondary Education, general
193 Science Education
194 Secondary Education, general
195 Social Science Education
196 Special Education
197 Speech Education
198 Student Guidance and Counseling

200 **ENGINEERING**, general
201 Aerospace, Aeronautical, and Astronautical Engineering
202 Agricultural Engineering
203 Architectural Engineering
204 Chemical Engineering
205 Civil Engineering
206 Electrical, Electronics, and Communications Engineering
207 Environmental and Ecological Engineering
208 Geological Engineering
209 Industrial and/or Management Engineering
210 Mechanical Engineering
211 Metallurgical and Materials Engineering
212 Mining and Mineral Engineering
213 Nuclear Engineering
214 Ocean Engineering
215 Petroleum Engineering

220 **FINE AND APPLIED ARTS**, general
221 Applied Design (ceramics, weaving, commercial art)
222 Art (painting, drawing, sculpture)
223 Art History and Appreciation
224 Dance
225 Dramatic Arts (theater arts)
226 Music (liberal arts)
227 Music (performing, composition, theory)
228 Music History and Appreciation
229 Photography/Cinematography

230 **FOREIGN LANGUAGES**, general
231 French
232 German
233 Italian
234 Latin
235 Spanish
236 Russian

240 **HEALTH PROFESSIONS**, general
241 Dentistry
242 Dental Assistant
243 Dental Hygiene
244 Dental Lab Technology
245 Environmental Health Technologies
246 Medicine, general
247 Medical Assistant or Medical Office Assistant
248 Medical or Laboratory Technology
249 Nursing (registered)
250 Nursing (licensed practical nurse)
251 Occupational Therapy
252 Optometry
253 Pharmacy
254 Physical Therapy
255 Public Health
256 Radiology
257 X-ray Technology
258 Surgical Technology (surgeon's assistant, etc.)
259 Veterinary Medicine

260 **HOME ECONOMICS**, general
261 Clothing and Textiles
262 Consumer Economics and Home Management
263 Family Relations and Child Development
264 Foods and Nutrition (including Dietetics)
265 Institutional Management

270 **LETTERS** (humanities), general
271 Classics
272 Comparative Literature
273 Creative Writing
274 English, general
275 Linguistics
276 Literature, English
277 Philosophy
278 Religion and Theology
279 Speech, Debate, Forensic Science

280 **MATHEMATICS**, general
281 Applied Mathematics
282 Statistics (mathematical and theoretical)

285 **PHYSICAL SCIENCE**, general
286 Astronomy
287 Chemistry
288 Earth Sciences
289 Geology
290 Oceanography
291 Physics

300 **COMMUNITY SERVICE**, general
301 Criminal Justice and Law Enforcement (police science, corrections, etc.)
302 Parks and Recreation Management
303 Public Administration
304 Social Work
305 Military

310 **SOCIAL SCIENCES**, general
311 Anthropology
312 Area Studies (American civilization, American studies, etc.)
Criminal Justice (see code 301)
313 Economics
314 Ethnic Studies (Asian studies, Black studies, Chicano studies, etc.)
315 Geography
316 History
317 International Relations
318 Law (prelaw)
319 Political Science
320 Psychology
321 Sociology

330 **TRADE, INDUSTRIAL, AND TECHNICAL**, general
331 Agricultural Mechanics and Technology
332 Air Conditioning, Refrigeration, and Heating Technology
333 Aeronautical and Aviation Technology
334 Appliance Repair
335 Automobile Body Repair
336 Automobile Mechanics
337 Business Machine Maintenance
338 Carpentry and Construction
339 Drafting/Engineering Graphics
340 Electricity and Electronics
341 Engineering Technology—Aeronautical
342 Engineering Technology—Automotive
343 Engineering Technology—Civil
344 Engineering Technology—Industrial/Manufacturing
345 Engineering Technology—Mechanical
346 Graphic Arts (printing, typesetting)
347 Heavy Equipment Operating
348 Dry Cleaning, Laundry, and Clothing Technology
349 Industrial Arts
350 Leatherworking (shoe repair, etc.)
351 Machinework (tool and die, etc.)
352 Masonry (brick, cement, stone, etc.)
353 Metalworking
354 Plumbing and Pipefitting
355 Radio/TV Repair
356 Small Engine Repair
357 Upholstering
358 Watch Repair and Other Instrument Maintenance and Repair
359 Welding
360 Woodworking (cabinetmaking, millwork)

370 **GENERAL STUDIES**