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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)

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STRUCTURING THE PERCEIVED OUTCOMES  
OF HIGHER EDUCATION

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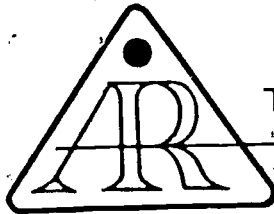
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## THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

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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  
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## 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. Lanning (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 traditions, 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 N = 1281  
     Biological Science, Mathematics,  
     Chemistry, Physics, Computer  
     Science, Engineering, and other  
     related sciences)

- 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  $\chi^2$  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 iterative 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 independently. 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 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, occurred 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, controlling 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 referred 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 referred 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 referred 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 appropriately 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:

<u>Factor</u>	<u>Lenning's Corresponding Subcategory</u>
Factor 1 ("learning skills")	<ul style="list-style-type: none"> <li>● Academic Skills</li> <li>● Intellectual Skills</li> </ul>
Factor 2 ("scientific/mathematics/problem solving")	<ul style="list-style-type: none"> <li>● Research and Scholarship Knowledge and Understanding</li> <li>● Academic Skills</li> </ul>
Factor 3 ("interpersonal skills/group dynamics")	<ul style="list-style-type: none"> <li>● Interpersonal, Leadership, and Organizational Skills</li> </ul>
Factor 4 ("humanistic outcomes")	<ul style="list-style-type: none"> <li>● Perceptual Characteristics</li> <li>● Attitudes and Values</li> <li>● Art forms and Works</li> </ul>
Factor 5 ("basic communication skills")	<ul style="list-style-type: none"> <li>● Expression and Communication Skills</li> </ul>
Factor 6 ("life skills")	<ul style="list-style-type: none"> <li>● Citizenship Activities and Roles</li> <li>● Citizenship and Family Membership Skills</li> <li>● Social Activities and Roles</li> </ul>

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 original 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.

<u>% "Very Much"</u>	<u>Outcome Area</u>
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.

<u>% "Very Little"</u>	<u>Outcome Area</u>
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)

<u>Average Rating</u>	<u>Outcome Area</u>
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

<u>% "Very Much"</u>	<u>Outcome Area</u>
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

<u>% "Very Much"</u>	<u>Outcome Area</u>
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

<u>% "Very Much"</u>	<u>Outcome Area</u>
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

<u>% "Very Much"</u>	<u>Outcome Area</u>
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

<u>% "Very Much"</u>	<u>Outcome Area</u>
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

<u>% "Very Little"</u>	<u>Outcome Area</u>
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

<u>% "Very Little"</u>	<u>Outcome Area</u>
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

<u>% "Very Little"</u>	<u>Outcome Area</u>
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

<u>% "Very Little"</u>	<u>Outcome Area</u>
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

<u>% "Very Little"</u>	<u>Outcome Area</u>
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  $\chi^2$  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.

<u>Outcome Area</u>	<u>Public Colleges</u>	<u>Private Colleges</u>
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.

<u>Outcome Area</u>	<u>Small Colleges</u>	<u>Large Colleges</u>
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.

<u>Outcome Area</u>	<u>Recent Alumni</u>	<u>Older Alumni</u>
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.

<u>Outcome Area</u>	<u>Males</u>	<u>Females</u>
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

	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>	<u>Factor 5</u>	<u>Factor 6</u>
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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### 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 B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	A B C D E F G H I J K L	

### SECTION VI—MAILING ADDRESSES

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

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

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

First Name \_\_\_\_\_ MI \_\_\_\_\_ Maiden Name \_\_\_\_\_ Last Name \_\_\_\_\_  
 Street Address P.O. Box \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_ Zip Code \_\_\_\_\_

Name \_\_\_\_\_  
 Street Address P.O. Box \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_ Zip Code \_\_\_\_\_

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.

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DO NOT WRITE BELOW THIS LINE.

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

### SECTION III—COLLEGE EXPERIENCES



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

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

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

Definitely Yes  
 Probably Yes  
 Uncertain  
 Probably No  
 Definitely No

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

Definitely Yes  
 Probably Yes  
 Uncertain  
 Probably No  
 Definitely No

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

Better  
 About the Same  
 Worse  
 Unable to Judge

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

Definitely Yes  
 Probably Yes  
 Uncertain  
 Probably No  
 Definitely No

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

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

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

Parents or Relatives  
 Personal Savings  
 Summer Employment  
 Employment at College  
 Spouse  
 VA Benefits  
 Social Security Benefits  
 Student Loans (FSL, etc)  
 Scholarships  
 Educational Grants (BEOG, SEOG, etc)

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

Publications  
 Homecoming Activities  
 Fund Raising Programs  
 Chapter Meetings  
 Tour Programs

VERY GOOD  
 FAIR  
 POOR  
 NO OPINION  
 DOES NOT APPLY

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

VERY MUCH  
 SOMEWHAT  
 VERY LITTLE

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



### 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.

<p><b>PART A: TO BE COMPLETED BY ALL ALUMNI</b></p> <p><b>A</b></p> <p>WHICH OF THE FOLLOWING BEST DESCRIBES WHAT YOU ARE CURRENTLY DOING? (Blacken Only ONE Oval)</p> <p> <input type="radio"/> Employed Full Time  <input type="radio"/> Employed Part Time  <input type="radio"/> Self-Employed (Partner, Business Owner, etc.)  <input type="radio"/> Working in the Armed Forces  <input type="radio"/> Continuing My Education  <input type="radio"/> Employed and Continuing My Education  <input type="radio"/> Unemployed (with my family)  <input type="radio"/> Unemployed  <input type="radio"/> Other         </p>	<p><b>PART B: COMPLETE THE FOLLOWING QUESTIONS ONLY IF YOU HAVE EVER HELD A FULL-TIME JOB SINCE GRADUATING FROM THIS COLLEGE</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> <p><b>B</b></p> <p>FROM WHICH SOURCE DID YOU LEARN ABOUT THE FIRST JOB YOU HELD AFTER GRADUATING FROM THIS COLLEGE? (Blacken Only ONE Oval)</p> <p> <input type="radio"/> College Placement Office  <input type="radio"/> College Counselor/Adviser  <input type="radio"/> Faculty at the College  <input type="radio"/> Parent or Relative  <input type="radio"/> Newspaper/Trade Publication  <input type="radio"/> Professional Meeting  <input type="radio"/> Another Student Friend  <input type="radio"/> Recruited by Employer  <input type="radio"/> Public/Private Employment Agency  <input type="radio"/> Other         </p> </td> <td style="width:50%; vertical-align: top;"> <p><b>C</b></p> <p>INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR PROBLEM, MINOR PROBLEM, OR NOT A PROBLEM IN OBTAINING YOUR FIRST JOB AFTER GRADUATION.</p> <p> <input type="checkbox"/> MAJOR PROBLEM  <input type="checkbox"/> MINOR PROBLEM  <input type="checkbox"/> NOT A PROBLEM         </p> <p> <input type="checkbox"/> Deciding What I Wanted to Do  <input type="checkbox"/> Knowing How to Find Job Openings  <input type="checkbox"/> Finding Job Interviews  <input type="checkbox"/> Writing a Resume/Vita or Letter of Introduction  <input type="checkbox"/> Finding a Job That Paid Enough  <input type="checkbox"/> Completing Job Applications  <input type="checkbox"/> Finding a Job for Which I Was Trained  <input type="checkbox"/> Finding a Job Where I Wanted to Live  <input type="checkbox"/> Finding the Kind of Job I Wanted  <input type="checkbox"/> Race/sex Discrimination         </p> </td> </tr> </table>	<p><b>B</b></p> <p>FROM WHICH SOURCE DID YOU LEARN ABOUT THE FIRST JOB YOU HELD AFTER GRADUATING FROM THIS COLLEGE? (Blacken Only ONE Oval)</p> <p> <input type="radio"/> College Placement Office  <input type="radio"/> College Counselor/Adviser  <input type="radio"/> Faculty at the College  <input type="radio"/> Parent or Relative  <input type="radio"/> Newspaper/Trade Publication  <input type="radio"/> Professional Meeting  <input type="radio"/> Another Student Friend  <input type="radio"/> Recruited by Employer  <input type="radio"/> Public/Private Employment Agency  <input type="radio"/> Other         </p>	<p><b>C</b></p> <p>INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR PROBLEM, MINOR PROBLEM, OR NOT A PROBLEM IN OBTAINING YOUR FIRST JOB AFTER GRADUATION.</p> <p> <input type="checkbox"/> MAJOR PROBLEM  <input type="checkbox"/> MINOR PROBLEM  <input type="checkbox"/> NOT A PROBLEM         </p> <p> <input type="checkbox"/> Deciding What I Wanted to Do  <input type="checkbox"/> Knowing How to Find Job Openings  <input type="checkbox"/> Finding Job Interviews  <input type="checkbox"/> Writing a Resume/Vita or Letter of Introduction  <input type="checkbox"/> Finding a Job That Paid Enough  <input type="checkbox"/> Completing Job Applications  <input type="checkbox"/> Finding a Job for Which I Was Trained  <input type="checkbox"/> Finding a Job Where I Wanted to Live  <input type="checkbox"/> Finding the Kind of Job I Wanted  <input type="checkbox"/> Race/sex Discrimination         </p>	<p><b>D</b></p> <p>WHAT WAS YOUR ANNUAL SALARY/INCOME IN THE FIRST JOB YOU HELD AFTER COLLEGE?</p> <p> <input type="radio"/> Less than \$6,000  <input type="radio"/> \$6,000 to \$8,999  <input type="radio"/> \$9,000 to \$11,999  <input type="radio"/> \$12,000 to \$14,999  <input type="radio"/> \$15,000 to \$17,999  <input type="radio"/> \$18,000 to \$20,999  <input type="radio"/> \$21,000 to \$23,999  <input type="radio"/> \$24,000 to \$26,999  <input type="radio"/> \$27,000 to \$29,999  <input type="radio"/> \$30,000 to \$39,999  <input type="radio"/> \$40,000 to \$50,000  <input type="radio"/> Over \$50,000         </p>
<p><b>B</b></p> <p>FROM WHICH SOURCE DID YOU LEARN ABOUT THE FIRST JOB YOU HELD AFTER GRADUATING FROM THIS COLLEGE? (Blacken Only ONE Oval)</p> <p> <input type="radio"/> College Placement Office  <input type="radio"/> College Counselor/Adviser  <input type="radio"/> Faculty at the College  <input type="radio"/> Parent or Relative  <input type="radio"/> Newspaper/Trade Publication  <input type="radio"/> Professional Meeting  <input type="radio"/> Another Student Friend  <input type="radio"/> Recruited by Employer  <input type="radio"/> Public/Private Employment Agency  <input type="radio"/> Other         </p>	<p><b>C</b></p> <p>INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR PROBLEM, MINOR PROBLEM, OR NOT A PROBLEM IN OBTAINING YOUR FIRST JOB AFTER GRADUATION.</p> <p> <input type="checkbox"/> MAJOR PROBLEM  <input type="checkbox"/> MINOR PROBLEM  <input type="checkbox"/> NOT A PROBLEM         </p> <p> <input type="checkbox"/> Deciding What I Wanted to Do  <input type="checkbox"/> Knowing How to Find Job Openings  <input type="checkbox"/> Finding Job Interviews  <input type="checkbox"/> Writing a Resume/Vita or Letter of Introduction  <input type="checkbox"/> Finding a Job That Paid Enough  <input type="checkbox"/> Completing Job Applications  <input type="checkbox"/> Finding a Job for Which I Was Trained  <input type="checkbox"/> Finding a Job Where I Wanted to Live  <input type="checkbox"/> Finding the Kind of Job I Wanted  <input type="checkbox"/> Race/sex Discrimination         </p>			

<p><b>PART B: CONTINUED</b></p>		<p><b>PART C: COMPLETE THESE QUESTIONS ONLY IF YOU ARE CURRENTLY UNEMPLOYED</b></p>		
<p><b>E</b></p> <p>HOW LONG DID IT TAKE YOU TO OBTAIN YOUR FIRST FULL-TIME JOB AFTER LEAVING THIS COLLEGE?</p> <p> <input type="radio"/> Obtained the Job Prior to Leaving College  <input type="radio"/> Less Than One Month  <input type="radio"/> 1 to 3 Months  <input type="radio"/> 4 to 6 Months  <input type="radio"/> 7 to 12 Months  <input type="radio"/> Over 12 Months         </p>	<p><b>F</b></p> <p>INDICATE THE NUMBER OF FULL-TIME JOBS YOU HAVE HELD SINCE LEAVING THIS COLLEGE</p> <p> <input type="radio"/> 1  <input type="radio"/> 2  <input type="radio"/> 3  <input type="radio"/> 4  <input type="radio"/> 5 or More         </p>	<p><b>G</b></p> <p>INDICATE THE PRIMARY REASON YOU ARE NOW UNEMPLOYED</p> <p> <input type="radio"/> Have Been Unable to Find a Full-Time Job Since College  <input type="radio"/> Was Laid Off by Employer  <input type="radio"/> Quit to Find Another Job  <input type="radio"/> Health/Personal Reasons  <input type="radio"/> Do Not Desire Employment at This Time  <input type="radio"/> Other         </p>	<p><b>H</b></p> <p>HOW LONG HAVE YOU ACTIVELY BEEN SEEKING EMPLOYMENT?</p> <p> <input type="radio"/> Not Seeking Employment  <input type="radio"/> Less Than 1 Month  <input type="radio"/> 1 to 3 Months  <input type="radio"/> 4 to 6 Months  <input type="radio"/> 7 to 12 Months  <input type="radio"/> Over 12 Months         </p>	<p><b>I</b></p> <p>HAVE YOU SOUGHT HELP FROM THIS COLLEGE'S PLACEMENT OFFICE?</p> <p> <input type="radio"/> Yes, It Has Been Helpful  <input type="radio"/> Yes, but It Has Not Been Helpful  <input type="radio"/> No         </p>

<p><b>PART D: COMPLETE THESE QUESTIONS ONLY IF YOU ARE CURRENTLY EMPLOYED</b></p>					
<p><b>J</b></p> <p>INDICATE YOUR CURRENT OCCUPATION</p> <p>Use the List of College Majors and Occupational Choices to indicate your current occupation.</p>	<p><b>K</b></p> <p>WHAT IS YOUR CURRENT ANNUAL SALARY/INCOME?</p> <p> <input type="radio"/> Less than \$6,000  <input type="radio"/> \$6,000 to \$8,999  <input type="radio"/> \$9,000 to \$11,999  <input type="radio"/> \$12,000 to \$14,999  <input type="radio"/> \$15,000 to \$17,999  <input type="radio"/> \$18,000 to \$20,999  <input type="radio"/> \$21,000 to \$23,999  <input type="radio"/> \$24,000 to \$26,999  <input type="radio"/> \$27,000 to \$29,999  <input type="radio"/> \$30,000 to \$39,999  <input type="radio"/> \$40,000 to \$50,000  <input type="radio"/> Over \$50,000         </p>	<p><b>L</b></p> <p>HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR PRESENT OCCUPATION?</p> <p> <input type="radio"/> Very Well  <input type="radio"/> Adequately  <input type="radio"/> Poorly  <input type="radio"/> Not at All         </p>	<p><b>M</b></p> <p>HOW CLOSELY RELATED IS YOUR CURRENT OCCUPATION TO YOUR MAJOR AT THIS COLLEGE?</p> <p> <input type="radio"/> Highly Related  <input type="radio"/> Moderately Related  <input type="radio"/> Slightly Related  <input type="radio"/> Not Related         </p>	<p><b>N</b></p> <p>DO YOU FEEL YOU ARE CURRENTLY UNDEREMPLOYED?</p> <p> <input type="radio"/> Yes  <input type="radio"/> No         </p>	<p><b>O</b></p> <p>INDICATE YOUR SATISFACTION WITH THE FOLLOWING ASPECTS OF YOUR PRESENT JOB</p> <p> <input type="checkbox"/> VERY SATISFIED  <input type="checkbox"/> SATISFIED  <input type="checkbox"/> NEUTRAL  <input type="checkbox"/> DISSATISFIED  <input type="checkbox"/> VERY DISSATISFIED         </p> <p> <input type="checkbox"/> Challenge  <input type="checkbox"/> Location  <input type="checkbox"/> Salary and Benefits  <input type="checkbox"/> Advancement Potential  <input type="checkbox"/> Working Conditions  <input type="checkbox"/> Career Potential         </p>

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.

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.

Please use a soft (No. 1 or 2) lead pencil to fill in the oval indicating your response. DO NOT

PAGE 1

USE A SOFT LEAD PENCIL ONLY

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 remain-

ing blocks by "blackening" the single most appropriate oval in each case.

Block A: SOCIAL SECURITY NUMBER (Identification Number). Includes a grid for entering digits and a vertical column of 10 ovals for marking.

Block B: AGE. Includes age ranges (20 or under to 62 or over) and a vertical column of 10 ovals for marking.

Block C: RACIAL/ETHNIC GROUP. Includes categories like Afro-American Black, American Indian or Alaskan Native, etc. and a vertical column of 10 ovals for marking.

Block D: HOW MANY YEARS HAS IT BEEN SINCE YOU GRADUATED FROM THIS COLLEGE? (To the Nearest Year). Includes ranges from 1 year to 10 or more years and a vertical column of 10 ovals for marking.

Block E: INDICATE THE HIGHEST DEGREE YOU NOW HOLD. Includes Associate, Bachelor's, Master's, Doctor's, and Professional Degrees and a vertical column of 10 ovals for marking.

Block F: INDICATE YOUR MAJOR AT THIS COLLEGE. Includes a vertical column of 10 ovals for marking.

Block G: SEX. Includes Male and Female and a vertical column of 10 ovals for marking.

Block H: WHAT WAS YOUR PRIMARY ENROLLMENT STATUS AT THIS COLLEGE? Includes Full Time Student and Part Time Student and a vertical column of 10 ovals for marking.

Block I: WERE YOU MARRIED AT THE TIME YOU ATTENDED THIS COLLEGE? Includes Yes and No and a vertical column of 10 ovals for marking.

Block J: WHAT WAS YOUR RESIDENCE CLASSIFICATION AT THIS COLLEGE? Includes In-state, Out-of-state, and International Student (Not U.S. Citizen) and a vertical column of 10 ovals for marking.

Block K: HOW MANY YEARS DID YOU ATTEND THIS COLLEGE (To the Nearest Year). Includes ranges from 1 year to 5 or more years and a vertical column of 10 ovals for marking.

Block L: WHERE DO YOU CURRENTLY LIVE? Includes In the State in Which This College is Located, In Another State or Country, and a vertical column of 10 ovals for marking.

Block M: DO YOU PLAN TO ATTEND THIS COLLEGE IN THE FUTURE? Includes Yes, Undecided, and No and a vertical column of 10 ovals for marking.

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.

Block A: WHAT IS THE MAJOR REASON YOU CONTINUED YOUR EDUCATION? (Mark Only ONE Oval). Includes reasons like Not My First Choice, to get a new credential, to improve myself, to earn a Master's Degree, and for personal and improvement other. Includes a vertical column of 10 ovals for marking.

Block B: MAJOR AREA OF STUDY SINCE GRADUATING FROM THIS COLLEGE. Includes a vertical column of 10 ovals for marking.

Block C: HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR CONTINUING EDUCATION? Includes options from Excellent to Very Poor and a vertical column of 10 ovals for marking.

Block D: WHAT IS THE HIGHEST DEGREE YOU PLAN TO OBTAIN? Includes Associate, Bachelor's, Master's, Doctor's, Professional, and Other degrees, and an option to Do Not Plan to Obtain Another Degree. Includes a vertical column of 10 ovals for marking.

Block E: HOW MANY CREDIT HOURS HAVE YOU EARNED SINCE GRADUATING FROM THIS COLLEGE? Includes ranges from 1-10 to 51-60 and I Am Not Taking Courses for Credit. Includes a vertical column of 10 ovals for marking.

Block F: WHAT HAS BEEN YOUR PRIMARY ENROLLMENT STATUS DURING YOUR CONTINUING EDUCATION? Includes Full Time Student and Part Time Student and a vertical column of 10 ovals for marking.



## 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.)
  - 313 Criminal Justice (see code 301)
  - 314 Economics
  - 315 Ethnic Studies (Asian studies, Black studies, Chicano studies, etc.)
  - 316 Geography
  - 317 History
  - 318 International Relations
  - 319 Law (prelaw)
  - 320 Political Science
  - 321 Psychology
  - 322 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**