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ABSTRACT

This report describes post-community college activities of former occupational/technical students at 13 Virginia community colleges. The colleges identified 11,623 former students as eligible, of whom 3,433 were graduates who had earned an associate degree, diploma, or certificate. An overall response rate of 61 percent was obtained, 73 percent for graduates and 56 percent for nongraduates. The data were summarized to permit comparison of respondent groups on the basis of sex, race, graduation status, degree earned, and curriculum. The factors relating to postcollege activities included employment status, relevance of curriculum to present job, initial and present salary, extent and reasons for continuing education, reasons for withdrawal before graduation, and intention to return to college. Greater percentages of graduates than nongraduates were employed full-time. Diploma graduates had higher rates of employment than either degree or certificate graduates. The curricular areas of public service and health showed a higher degree of job congruence than other areas. The median salary for initial jobs was $5,419 and rose to $7,158 for present jobs. Nongraduates received higher median initial and present salaries than graduates. (Author/MJK)

POST-COLLEGE ACTIVITIES OF FORMER OCCUPATIONAL-TECHNICAL STUDENTS

Research Report No. 3

by

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INTRODUCTION

This report describes post-community college activities of former occupational-technical students at Virginia community colleges and compares various subgroups within that population. It is the second of three research reports on a follow-up study conducted by the Virginia Department of Community Colleges. The first report (Gustilo & Trufant, 1974) provides information about the students' personal and demographic characteristics and a detailed description of the total project. A third report (Trufant, Kelly, & Pullen, 1974) describes and compares students' attitudes toward their community college experience and current employment.

Occupational-technical programs are designed to prepare students for employment in technical, paraprofessional, and vocational jobs. Although these programs usually lead to a formal certificate, diploma, or associate degree, community college records indicate that a majority of the students take employment prior to completing their program requirements. This follow-up study was carried out to provide answers to questions about program outcomes for both graduates and nongraduates. The study was supported substantially with research funds administered by the Division of Vocational Education, Virginia Department of Education.

Overview of the Total Project

During early 1972 an extensive data collection effort was directed toward the entire population of former students of the Virginia Community College System who had been enrolled in occupational-technical programs anytime from fall 1966 through fall 1969. Graduates who had earned associate degrees, diplomas or certificates from 1966 through 1971 were included. Former students who had changed either to or from occupational-technical programs were also included.

The study was designed to examine characteristics, attitudes and postcollege activities of former students, as indicated by the following objectives:

1. To identify selected personal and demographic characteristics of former students in occupational-technical programs.
2. To identify the postcollege activities of former students.
3. To study the attitudes of former students toward their community college experience and current employment.
4. To study patterns of student retention and withdrawal.

5. To examine differences among graduates and nongraduates, and among the several types of graduates in terms of their characteristics, postcollege activities, and personal evaluations of college experience and employment.

Thirteen of the Virginia Community College System's colleges were in operation by fall 1969 and had students eligible for the study. According to a prescribed procedure and format (see Gustilo & Trufant, 1974), the individual colleges identified 11,623 former students as eligible, of whom 3,433 were graduates who had earned an associate degree, diploma or certificate. A college data form (Appendix A) was sent to community college personnel, who provided basic information from students' college records. A questionnaire (Appendix B) was then mailed to all subjects and a three phase follow-up effort to collect responses was implemented. Twelve percent of the intended mailings were returned as undeliverable. An overall response rate of 61 percent was obtained, 73 percent for graduates and 56 percent for nongraduates.

Telephone interviews were conducted with a five percent random sample of nonrespondents as a check on nonresponse bias. Selected items from the questionnaire and from the data supplied by the colleges were used to test for differences between respondents and nonrespondents. Significant differences between the two groups were indicated by the following factors: fathers' education, initial postcollege salaries, and respondents' ratings of job satisfaction, technical knowledge gained at community colleges, counseling services, and the overall community college experience. The differences which were significant were sensitive areas which might be biased by the loss of anonymity involved in substituting telephone conversations for questionnaires.

Literature Review

An examination of current community college literature, the ERIC Research in Education Annual Index (1970, 1971, 1972), and available private studies revealed a considerable amount of data on student characteristics and attitudes but little information on their postcollege activities. The dearth of substantial information about postcollege activities was even more severe when the inquiry was limited to occupational-technical students.

Snyder and others (1972) did an extensive study of the activities of occupational-technical graduates from Harrisburg Area Community College. Limited aspects of occupational-technical students' postcollege activities were examined in the following small-scale studies: University of Hawaii (1972), Portland Community College (1972), and Gaddis (1970). On the national level, Monroe (1972), Koos (1970), Cross (1971), Bushnell (1973) and Thornton (1972) presented representative studies of community college programs and students; but none of these studies developed information about postcollege activities of occupational-technical students.

Noting that attempts at occupational-technical follow-up lack convenient and quantifiable measures of success such as grade point average for college transfer students, Thornton (1972) acknowledged that:

> The 'follow-up' of graduates and former students is an important part of the self-evaluation of the community junior college (p. 275). Of the two aspects of follow-up, junior colleges have been more concerned with former students who have gone on to upper-division study in colleges and universities. Few studies are reported of the success of vocationally trained graduates in finding employment in the area of their training and their comparative success after placement. Both aspects are essential to a complete follow-up program (p. 276).

In summary, a review of the literature indicates the need for objective studies of postcollege activities of former occupational-technical students but provides little precedent in this area. There is a paucity of research relating directly to the purpose of the present study, which is to provide a basis for evaluating the occupational-technical programs within the Virginia Community College System.

Research Questions

The following research questions are investigated in this report. The findings reported are in answer to these questions, and the summary is presented in terms of the research questions.

1. What types of employment and other postcollege endeavors have former students engaged in since leaving community colleges?
2. What proportions have engaged in activities directly related to their community college training and education?
3. What were their initial and present salaries?
4. What proportions have found employment within their home localities or within Virginia?
5. What proportions have continued their education and how consistent was that continued education with college programs?
6. What reasons were given by nongraduates for not completing their community college programs?
7. What differences in postcollege activities vary with sex, race, curriculum, graduation status, and type of graduation credential?

Data Analysis

The method of analysis for the collected data was entirely descriptive. Automated data processing procedures were used to collate the various inputs and to produce usable data summaries. The data were summarized to permit comparison of respondent groups on the basis of sex, race, graduation status, graduation credential, and curriculum.

In order to analyze findings by useful curricular groupings, the individual curricula were grouped into six areas which contained similar or related programs. Appendix C enumerates the individual curricula encompassed by each of the curricular areas. Readers are referred to the companion report by Gustilo and Trufant (1974) for a more detailed treatment of the data analysis.

Limitations

1. The findings do not include data on prior work experience of students, full-time or part-time attendance, and day or evening status. Information about these variables would facilitate interpretation of certain findings.

2. Any student who had completed at least one occupational-technical course was included in the occupational-technical population. Findings about students with very few credit hours in occupational-technical programs may not adequately reflect the effects of these programs.

3. Any student who had not completed a degree program was classified as a nongraduate; number of credit hours earned was not reported. Some nongraduates earned as many or more credit hours than did graduates.

4. The analyses of data in this report were descriptive; no inference tests nor multivariate analyses were carried out.

Definitions of Terms

Certain terms need to be defined according to their use in this report. The following definitions should be noted:

1. Occupational-technical program - a program designed to prepare technicians, semi-professional workers, and skilled craftsmen for employment

2. Transfer program - a program including college freshman and sophomore courses in the arts and sciences and preprofessional courses meeting standards acceptable for transfer to baccalaureate degree programs

3. Associate in Applied Science (AAS) degree program - a two-year program designed primarily to provide competence for employment in a specific occupational field

4. Diploma program - a two-year program which normally excludes general education and is designed to provide occupational competence in a specific field

5. Certificate program - a program normally of one year's duration which provides competence in a specific job or family of jobs

6. Graduate - any respondent who had earned an AAS degree, diploma, or certificate in an occupational-technical program

7. Nongraduate - any respondent who had enrolled in an occupational-technical program but had not earned an award

8. Minority - any person (or group) other than white, including Afro-American, Oriental, American Indian, and Spanish-surnamed American

9. Developmental student - a student who had enrolled in a preparatory mathematics or English course as a prerequisite for admission to an occupational-technical or college transfer program

10. Unclassified student - a student who had not been formally admitted to an occupational-technical or transfer program and who could not be classified by freshman or sophomore level

Summary of the First Report

The first report (Gustilo & Trufant, 1974) contains a detailed description of the total project and describes background characteristics of the respondents. A summary of these characteristics is provided in the following paragraphs.

Enrollments in various curricula and degree programs were not evenly distributed. Slightly more than half of the respondents were in business curricula, and an additional one-third were in engineering. Most of the graduates had earned AAS degrees, rather than diplomas or certificates.

About seven-tenths of total respondents were men, but among minority respondents the percentages of men and women were nearly equal. Proportionally more women than men had graduated at the time of the survey. Most men were in engineering or business curricula, while women overwhelmingly chose business.

White and minority groups showed different patterns of distribution by curriculum, graduation status, and graduation credential. While minority respondents tended to enroll in business and health curricula, whites chose public service and engineering. Proportionally more whites than minorities had graduated at the time of the survey. Whites more often earned AAS degrees and diplomas, while minorities more frequently earned certificates.

Age and marital status varied for men and women. The median age of all respondents was 22.8 years, with men approximately one year older than women. Although the majority of all respondents were married, this proportion was greater for men than for women.

About one in three parents of the former students had no formal education beyond the eighth grade. Fathers of AAS degree graduates were generally better educated than fathers of other graduates. Minority parents tended to have less formal education than white parents.

Grade point average varied by sex, race, graduation status, and graduation credential. On the average, women had higher GPAs than men, and whites earned better grades than minorities. Graduates had higher GPAs than nongraduates, and those with diplomas had the highest GPAs of all graduates.

RESULTS

The following factors relating to the postcollege activities of former occupational-technical students are reported:

1. Present employment status
2. State in which presently employed
3. Distance from college to present employment
4. Curricular relatedness to first job
5. Curricular relatedness to present job
6. Reasons present job not related to curriculum
7. Initial salary
8. Present salary
9. Extent of continued education
10. Reasons for continuing education
11. Relatedness of later study to previous curriculum
12. Reasons for nongraduates' discontinuing attendance
13. Nongraduates' intentions of returning to the community college

Each of these factors is examined across the five variables of sex, race, graduation status, graduation credential, and curriculum. The findings for each factor are presented in a separate table, arranged to show results across the five variables.

Present Employment Status

Former students were asked to indicate their employment status at the time of the study by selecting one of seven categories. The results are as follows:

Employment Status	Percent
Employed full-time	72
College full-time	8
Military services	5
Homemaker	5
Employed part-time	5
Unemployed	3
Other	2

Ninety percent of the former students were engaged in full-time pursuit of career, college, military service, or homemaking. Table 1 shows more complete information about the activity for former students and is the appropriate reference for the comments which follow.

TABLE I

Present Employment Status

Group	N	Percent by Response Category[a]						
		Full-Time	Part-Time	College Full-Time	Military	Homemaker	Unemployed	Other
Sex								
Male	4,272	76	4	8	8	-	2	2
Female	1,863	64	8	7	-	15	4	2
Total	6,135	72	5	8	5	5	3	2
Race								
White	5,421	73	5	8	6	4	2	2
Minority	714	66	8	9	5	4	6	2
Graduation Status								
Graduate	2,227	78	4	7	4	4	2	1
Nongraduate	3,908	69	6	9	6	5	3	2
Graduation Credential								
AAS	1,389	75	4	9	4	4	2	2
Diploma	380	88	1	1	6	2	2	1
Certificate	447	77	4	4	2	9	3	1
Curricular Area								
Business	3,088	70	5	8	5	7	3	1
Communications	136	51	9	20	5	6	7	3
Engineering	2,019	78	4	6	8	1	2	2
Health	324	61	14	9	1	12	2	2
Public Service	368	76	4	9	5	2	2	1
Other	182	76	7	9	2	3	3	1

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

Men reported full-time employment more frequently than women (76% and 64%). However, the percentage of women working part-time was twice that of men (8% and 4%), and 15 percent of the women were homemakers. About equal proportions of women and men were enrolled full-time at college (7% and 8%). Among men, equal numbers were in the military and in college full-time.

Proportionally more white than minority respondents reported full-time employment (73% and 66%). Both groups reported nearly equal full-time college attendance (9% and 8%) and equal homemaking occupation (4%). Minority students indicated more part-time employment (8% and 5%) and unemployment (6% and 2%).

Graduates, more than nongraduates, reported full-time employment (78% and 69%). Nongraduates reported slightly more full-time college attendance (9% and 7%), more military service (6% and 4%), and more part-time employment (6% and 4%).

The highest rate of full-time employment (88%) was reported by diploma graduates. About equal proportions of certificate and AAS degree recipients were employed full-time (77% and 75%). AAS degree graduates were much more likely to be enrolled in full-time college study than were diploma and certificate graduates (9%, 1% and 4%). Certificate graduates were more often homemakers than were graduates from diploma and degree programs (9%, 2% and 4%).

Former students from the six curricular areas reported full-time employment status as follows:

Curricular Area	Percent Employed
Engineering	78
Public Service	76
Other	76
Business	70
Health	61
Communications	51

Former communications students, who reported the least full-time employment, were enrolled full-time in college (20%) or were unemployed (7%) more than twice as frequently as other students. Those who had been students in health programs showed greater percentages in part-time employment (14%) and homemaking (12%) than did those from other curricular areas.

State In Which Presently Employed

Former occupational-technical students were overwhelmingly employed in Virginia or adjacent areas, as noted in the following tabulation. Nearly nine out of ten (88%) were working in Virginia, and an additional four percent were employed in the District of Columbia.

TABLE 2

State in Which Presently Employed

Group	N	Percent by Response Category[a]							
		VA	MD	WV	NC	TN	DC	KY	Other
Sex									
Male	3,141	88	2	1	2	1	4	-	3
Female	1,157	87	1	-	2	1	6	-	4
Total	4,298	88	1	1	2	1	4	-	3
Race									
White	3,845	88	1	1	2	1	4	-	3
Minority	453	87	1	-	2	-	8	-	2
Graduation Status									
Graduate	1,687	86	2	1	3	1	4	-	3
Nongraduate	2,611	90	1	-	1	1	4	-	3
Graduation Credential									
AAS	1,014	83	2	1	2	1	7	-	3
Diploma	330	86	-	1	6	3	1	-	3
Certificate	338	93	1	1	2	1	1	-	2
Curricular Area									
Business	1,819	87	2	1	1	1	6	-	3
Communications	65	94	2	-	3	-	-	-	2
Engineering	1,536	90	1	1	3	2	2	-	2
Health	190	88	-	1	3	1	4	-	4
Public Service	280	90	1	-	-	-	5	-	3
Other	133	83	5	-	2	-	8	1	2

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

TABLE 3

Distance from College to Present Employment

Group	N	Percent by Response Category[a]			
		Up to 25 Miles	25-49 Miles	50-99 Miles	100 Miles and Over
Sex					
Male	3,155	68	13	6	13
Female	1,156	73	11	4	13
Total	4,311	69	13	6	13
Race					
White	3,856	69	13	6	13
Minority	455	74	10	3	13
Graduation Status					
Graduate	1,701	61	15	7	17
Nongraduate	2,610	75	11	4	10
Graduation Credential					
AAS	1,030	66	13	5	15
Diploma	330	40	18	16	26
Certificate	336	64	16	6	14
Curricular Area					
Business	2,100	71	13	4	12
Communications	65	59	15	15	11
Engineering	1,541	64	13	8	15
Health	191	69	12	4	15
Public Service	279	83	7	3	7
Other	135	68	17	3	12

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

State	Percent Employed
Virginia	88
District of Columbia	4
North Carolina	2
Maryland	1
Tennessee	1
West Virginia	1
Other	3

The geographical employing regions are further examined in terms of sex, race, graduation and curriculum in Table 2. A higher percentage of minorities than whites (8% and 4%) and of women than men (6% and 4%) were working in the District of Columbia. Slightly more nongraduates than graduates remained in Virginia (90% and 86%). Certificate graduates were more likely to be employed in Virginia than were either diploma or associate degree graduates (93%, 86% and 83%). AAS and diploma graduates showed a similar location pattern, except that AAS students who left Virginia tended to locate in Washington, D.C., while diploma students chose North Carolina. Curricular area does not appear to be related to location of employment.

Distance from College to Present Employment

Most former students were employed in the general area where they had attended college. Sixty-nine percent of the total group were employed within 25 miles of their former college, 81 percent within 50 miles, and 87 percent within 100 miles (Table 3).

There were no differences in distance from former college to place of employment by sex or race, but nongraduates were more frequently employed locally than were graduates. Diploma graduates were employed further from the college than other graduates. Proportionally more public service graduates worked near the college than did graduates from other curricular areas.

Curricular Relatedness to Employment

The following discussion deals with job congruence, i.e., the relationship between community college curricula and subsequent jobs. Tables 4 and 5 contain detailed data on job congruence for first and present jobs. Table 6 shows reasons given for unrelated employment.

First jobs following community college attendance were very much related to curricula for 40 percent of former students, while present jobs were very much related for 48 percent of the students. In addition, 20 percent of first jobs and 24 percent of present jobs were reported to be somewhat related to college training. Very little or no relationship between jobs and college training was reported by 40 percent for first jobs and 28 percent for present employment. Overall job congruence (very much or somewhat relatedness) rose from 60 percent for first jobs after college to 72 percent for present jobs.

TABLE 4

Curricular Relatedness to First Job after College

Group	N	Percent by Response Category[a]		
		Yes, Very Much	Yes, Somewhat	No, or Very Little
Sex				
Male	2,503	37	21	43
Female	965	50	19	31
Total	3,468	40	20	40
Race				
White	3,126	41	21	38
Minority	342	33	13	54
Graduation Status				
Graduate	1,460	51	20	30
Nongraduate	2,008	33	20	47
Graduation Credential				
AAS	897	49	21	30
Diploma	283	56	16	28
Certificate	276	51	18	31
Curricular Area				
Business	1,713	36	23	41
Communications	58	26	12	62
Engineering	1,240	41	21	39
Health	161	75	5	21
Public Service	179	48	7	45
Other	117	44	17	39

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

TABLE 5

Curricular Relatedness to Present Job

Group	N	Percent by Response Category[a]		
		Yes, Very Much	Yes, Somewhat	No, or Very Little
Sex				
Male	2,925	44	25	32
Female	1,049	61	20	19
Total	3,974	48	24	28
Race				
White	3,573	49	24	28
Minority	401	43	23	34
Graduation Status				
Graduate	1,560	59	22	20
Nongraduate	2,414	41	25	34
Graduation Credential				
AAS	945	59	23	18
Diploma	300	59	18	24
Certificate	310	60	20	20
Curricular Area				
Business	1,928	44	27	29
Communications	56	43	16	41
Engineering	1,434	45	24	31
Health	170	85	7	8
Public Service	258	73	5	22
Other	128	48	27	25

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

Greater job congruence was reported by women than men, by graduates than nongraduates, and by whites than minorities. Women indicated very much job congruence 13 percent more frequently than men for first jobs after college and 17 percent more for present jobs. For both first and present jobs, graduates reported very much job congruence 18 percent more often than did nongraduates. Minorities reported little or no job congruence far more frequently for first jobs than present jobs (54% and 34%), while whites indicated a less dramatic change (38% and 28% for first and present jobs, respectively). Little difference was found for type of graduation credential.

The following tabulation shows that job congruence was highest in the health area and lowest in the communications area for both first and present jobs. All curricular areas showed marked increases in job congruence from initial to present jobs.

Curricular Area	Percent Reporting Initial Job Very Much or Somewhat Related	Percent Reporting Present Job Very Much or Somewhat Related
Health	80	92
Public Service	55	78
Other	61	75
Business	59	71
Engineering	62	69
Communications	38	59

In summary, more than seven of ten former students were holding jobs at the time of the study that were at least somewhat related to their community college training. Graduates, women, and whites reported greater job congruence than did their counterpart groups. Curricular areas having very specifically delineated vocational roles (i.e., public service with police science, and health with nursing) accounted for a higher level of present job congruence than did the more general areas such as communications.

Former students whose employment was not congruent with their curriculum reported the following reasons, listed in rank order. Since multiple reasons were allowed, the sum of listed reasons exceeds 100 percent.

Reason Job Not Related	Percent
Prefer work in another area	29
Not sufficiently qualified	29
No job in field of preparation	27
Better pay in another field	27
Other	10
Got new job by continuing education	4

As the above summary indicates, no particular reason appears to predominate. However, there are some notable differences among groups of respondents (Table 6). A higher percentage of women than men reported no job in their field of preparation, and few women were attracted by

TABLE 6

Reasons Present Job Not Related to Curriculum

Group	N	Percent by Response Category[a]					
		No Job in Field of Prep.	Better Pay in Another Field	Prefer Work in Another Field	Qualified For New Job By Continuing Education	Not Sufficiently Qualified	Other
Sex							
Male	877	25	28	29	4	29	10
Female	185	36	21	28	4	29	11
Total	1,062	27	27	29	4	29	10
Race							
White	937	26	28	31	4	28	10
Minority	125	35	15	18	6	38	11
Graduation Status							
Graduate	297	48	28	24	2	12	13
Nongraduate	765	19	26	31	4	36	9
Graduation Credential							
AAS	165	49	28	22	3	13	15
Diploma	70	37	34	27	1	9	16
Certificate	61	59	21	21	-	13	5
Curricular Area							
Business	521	30	27	30	4	31	9
Communications	23	35	13	13	9	35	4
Engineering	421	25	28	30	3	28	10
Health	12	8	33	17	8	33	17
Public Service	53	17	21	23	6	28	21
Other	6	25	28	25	3	16	19

[a]More than one response possible, therefore, totals may not equal 100%.

better pay in another field. Minorities, more than whites, reported no job in their field of preparation and indicated they were not sufficiently qualified. The percentage of whites who found better pay in another field or found another field in which they preferred to work was nearly twice that of minorities. The reader must remember that these percentages are based on only those respondents whose present jobs were not related to curricula.

Half of the graduates whose employment was not related to college curriculum cited no job in their field of preparation. Nongraduates indicated most often that they were not sufficiently qualified, or they preferred to work in another field. Health and public service students had the least difficulty in locating jobs in their field of preparation, while communications and business students reported the greatest difficulty.

Salary

All respondents who were employed full-time were asked to indicate their initial salaries after community college attendance and their present salaries (Tables 7 and 8). The time lapse between initial and present jobs is not the same for all respondents, since they left college at any time from 1966 to 1971. Thus, some of the present salaries reported may be equivalent to initial salaries, whereas others may represent five years of postcollege experience. A brief summary of salaries reported by subgroups is shown below:

Group	Initial Median Salary	Present Median Salary
Men	$5830	$7783
Women	4222	5162
White	5472	7535
Minority	4934	6359
Graduate	5320	6759
Nongraduate	5481	7409
Total	5419	7158

Women, compared to men, and minorities, compared to whites, showed both lower initial salaries and smaller rates of salary increase. The initial median salary for women was 72 percent of that reported for men, and the present median salary for women had fallen comparatively to 66 percent of that for men. Median salaries had increased by 22 percent for women and by 33 percent for men. Similarly, the initial median salary for minority students was 90 percent of that reported for whites, and the present median salary for minorities had fallen relatively to 88 percent of that for whites. The median salary for minorities had increased by 29 percent, compared to 32 percent for whites.

TABLE 7

Initial Salary after College

Group	N	Median Income	Median Age	Percent by Response Category[a] Up to $2,999	$3,000 to $3,999	$4,000 to $4,999	$5,000 to $5,999	$6,000 to $6,999	$7,000 to $7,999	$8,000 to $8,999	$9,000 to $9,999	$10,000 to $10,999	$11,000 to $11,999	$12,000 and Over
Sex														
Male	2,793	$5,830	23	10	9	15	18	16	14	8	4	3	1	3
Female	944	$4,222	22	20	25	22	12	9	7	3	1	-	-	-
Total	3,737	$5,419	23	13	13	17	17	14	12	6	3	2	1	2
Race														
White	3,372	$5,472	23	12	13	17	17	14	12	7	3	2	1	2
Minority	365	$4,934	23	16	14	21	17	12	12	2	2	2	-	2
Graduation Status														
Graduate	1,505	$5,320	23	11	14	19	17	16	13	6	2	1	-	1
Nongraduate	2,232	$4,934	23	14	12	16	17	13	11	6	3	3	1	3
Graduation Credential														
AAS	930	$5,800	23	8	11	18	17	18	16	7	2	1	-	1
Diploma	297	$5,687	22	11	9	16	21	20	12	8	3	-	-	1
Certificate	274	$3,869	22	23	31	26	12	3	2	2	1	2	-	-
Curricular Area														
Business	1,784	$4,939	23	15	17	19	16	12	9	5	3	2	1	3
Communications	53	$4,373	22	19	25	15	23	4	8	2	2	-	2	2
Engineering	1,401	$5,689	23	11	9	17	19	17	13	7	3	2	1	2
Health	157	$6,317	26	6	12	16	13	14	28	8	2	1	-	1
Public Service	225	$7,832	26	5	7	4	14	18	21	13	7	8	-	1
Other	117	$5,216	23	16	12	18	20	15	9	3	3	2	-	3

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

TABLE 8

Present Salary

Group	N	Median Income	Median Age	Percent by Response Category[a] Up to $2,999	$3,000 to $3,999	$4,000 to $4,999	$5,000 to $5,999	$6,000 to $6,999	$7,000 to $7,999	$8,000 to $8,999	$9,000 to $9,999	$10,000 to $10,999	$11,000 to $11,999	$12,000 and Over
Sex														
Male	2,891	$7,783	23	1	3	7	12	14	16	16	10	8	4	9
Female	1,038	$5,162	22	4	16	27	20	11	10	8	3	1	-	1
Total	3,929	$7,158	23	2	6	12	14	13	15	14	8	6	3	7
Race														
White	3,529	$7,235	23	1	6	11	14	13	15	14	8	6	3	7
Minority	400	$6,359	23	6	10	14	15	13	13	11	5	5	3	5
Graduation Status														
Graduate	1,571	$6,759	23	2	7	15	16	13	15	14	7	5	2	3
Nongraduate	2,358	$7,409	23	2	6	10	13	13	15	13	9	7	4	9
Graduation Credential														
AAS	955	$7,316	23	1	5	11	14	14	16	16	9	6	3	5
Diploma	302	$7,249	22	-	4	10	15	16	21	18	7	6	2	2
Certificate	311	$4,800	22	6	17	34	21	9	6	3	2	2	-	-
Curricular Area														
Business	1,694	$5,426	23	3	9	17	16	12	12	10	6	5	3	8
Communications	58	$4,832	22	-	12	21	21	22	12	3	3	2	2	2
Engineering	1,423	$7,601	23	1	3	7	12	15	18	17	9	8	3	6
Health	175	$7,147	26	1	6	11	20	10	15	26	6	2	-	2
Public Service	258	$8,316	26	1	2	2	6	13	20	20	14	12	5	4
Other	121	$6,499	23	5	7	15	16	13	13	7	10	7	2	3

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

TABLE 9

Median Salary for Graduates and Nongraduates

Group	Graduates				Nongraduates			
	N	Initial Median	N	Present Median	N	Initial Median	N	Present Median
Sex								
Male	1,010	$5,818	1,042	$7,493	1,783	$5,838	1,849	$7,978
Female	495	4,289	529	5,659	449	4,117	509	5,259
Total	1,505	5,320	1,571	6,759	2,232	5,481	2,358	7,409
Race								
White	1,373	$5,401	1,428	$6,850	1,939	$5,521	2,101	$7,493
Minority	132	4,624	143	5,724	233	5,173	257	6,670

Interestingly, the earnings of nongraduates exceeded those of graduates for both initial and present jobs. Initially, nongraduates earned 3 percent more than graduates; for present salaries the difference had grown to nearly 9 percent. The median salary gain for graduates was 27 percent, compared with 35 percent for nongraduates. In order to clarify these differences, graduate and nongraduate groups were further broken down by sex and race (Table 9). Although nongraduate men had much higher median salaries than graduate men, graduate women earned consistently higher salaries than nongraduate women. Minority and white nongraduates earned more than their graduate counterparts, but the salary difference was greater for minorities. Possible explanations for these differences will be presented in the implications section.

Among graduate groups, the salaries of AAS graduates and diploma graduates were comparable for both initial and present jobs, as shown in the following tabulation. Initial and present salaries for certificate graduates were far below those of the other graduate groups.

Graduation Credential	Initial Median Salary	Present Median Salary
AAS	$5800	$7316
Diploma	5687	7249
Certificate	3869	4800

Notable differences in salaries occurred among curricular groups. Public service salaries were highest, as shown in the tabulation which follows. Business and communications salaries were lowest.

Curricular Area	Initial Median Salary	Present Median Salary
Public Service	$7832	$8316
Engineering	5689	7601
Health	6317	7147
Other	5216	6499
Business	4939	5426
Communications	4373	4832

Continued Education

Respondents were asked to what extent they had continued their education after leaving the community college, why they had elected to pursue further study, and the extent to which that study was related to their community college curriculum (Tables 10, 11, and 12). The extent of continued education by all former students is shown in the tabulation which follows. Since multiple responses were possible, the total exceeds 100 percent. It is important to remember that this study deals with former occupational-technical students, whose primary goal was immediate employment rather than baccalaureate study.

TABLE 10

Extent of Continued Education

Group	N	Percent by Response Category[a]								
		Still Enrolled At Comm. College	None	Completed An Employer Training Program	Courses At Another 2-Yr. College	Courses 4-Yr. College or Univ.	Completed An Associate Degree	Completed A Bachelors Degree	Masters Degree or Beyond	Other
Sex										
Male	4,189	15	42	24	3	11	3	2	-	11
Female	1,860	15	59	13	3	6	2	1	-	9
Total	6,049	15	48	20	3	10	3	2	-	10
Race										
White	5,336	15	47	21	3	10	3	2	-	10
Minority	713	17	49	19	3	9	2	1	-	11
Graduation Status										
Graduate	2,222	5	53	22	2	13	4	3	-	10
Nongraduate	3,827	2	44	19	3	8	2	1	-	10
Graduation Credential										
AAS	1,385	4	48	22	2	18	7	5	-	11
Diploma	376	5	55	32	3	2	1	-	-	10
Certificate	449	9	66	17	1	5	1	-	-	8
Curricular Area										
Business	3,081	14	52	16	3	10	2	2	-	9
Communications	129	19	37	16	1	16	9	2	1	12
Engineering	1,967	11	46	27	3	8	2	1	-	12
Health	317	14	48	23	3	5	4	1	-	10
Public Service	375	38	25	20	1	14	4	4	-	10
Other	180	22	37	15	2	18	6	4	1	8

[a]More than one response possible, therefore, totals may not equal 100%.

TABLE 11

Reasons for Continuing Education

Group	N	Percent by Response Category[a]					
		Prep. For Oppor. In Present Job	Improve Skills In Present Job	Genl. Educ. Person. Sat.	To Change Occupation	Expected By Employ.	Other
Sex							
Male	1,936	49	41	46	13	14	7
Female	551	37	38	52	14	9	9
Total	2,507	46	40	47	13	13	7
Race							
White	2,229	47	41	48	13	13	7
Minority	278	40	32	44	17	10	8
Graduation Status							
Graduate	916	50	43	52	11	14	4
Nongraduate	1,591	44	38	45	15	13	9
Graduation Credential							
AAS	619	52	40	56	10	13	4
Diploma	164	52	61	43	8	20	1
Certificate	124	36	38	44	12	11	5
Curricular Area							
Business	1,122	42	36	49	14	11	9
Communications	61	41	26	61	10	8	10
Engineering	914	50	46	43	14	17	4
Health	120	48	52	47	8	12	5
Public Service	194	50	40	47	11	13	10
Other	96	46	31	63	17	12	7

[a]More than one response possible, therefore, totals may not equal 100%.

Extent of Continued Education	Percent
None	48
Employer training program	20
Still at community college	15
Courses at 4-year college	10
Other	10
Courses at another 2-year college	3
Completed an associate degree	3
Completed a bachelor's degree	2
Completed a master's degree or beyond	0

Half of the respondents continued their education in some way. The most frequent means of continued education was through employer training programs. Twenty-eight percent of the students had attended a community college, another two-year college, or a four-year college. Two percent had completed bachelor's degrees at the time of the survey.

Extent of continued education did not vary by race, but there were differences by sex, graduation status and credentials (Table 10). Fewer women than men continued education beyond community college. Proportionally more graduates than nongraduates were enrolled at four-year colleges (13% and 8%). Associate degree graduates attended four-year colleges more frequently than diploma or certificate graduates. Diploma graduates more frequently participated in employer training, and certificate graduates tended to remain enrolled at community colleges.

Among curricular groups, former public service participants most often continued their education (Table 10). Four of ten remained enrolled in community colleges at the time of the study, and many were involved in employer training programs and four-year college programs. Four percent received bachelor degrees after leaving the community college, and four percent completed associate degrees (presumably at community colleges in other states).

The most commonly expressed reasons for pursuing further education were desire for more general education and personal satisfaction, preparation for opportunities in present jobs, and improvement of skills used in present jobs. The tabulation which follows presents the reasons in rank order. Because multiple responses were permitted, the total is greater than 100 percent.

Reason for Continued Education	Percent
General education and personal satisfaction	47
Prepare for opportunities in present job	46
Improve skills in present job	40
Expected by employer	13
To change occupation	13
Other	7

Men were more concerned than women with job advancement and employer expectations, while women led slightly in noting personal satisfaction

TABLE 12

Relatedness of Later Study to Previous Curriculum

Group	N	Percent by Response Category[a]		
		Yes, Very Much	Yes, Somewhat	No, or Very Little
Sex				
Male	1,952	43	34	24
Female	545	44	27	28
Total	2,497	43	32	25
Race				
White	2,222	43	32	25
Minority	275	42	34	24
Graduation Status				
Graduate	911	51	30	19
Nongraduate	1,586	38	34	28
Graduation Credential				
AAS	618	55	29	17
Diploma	160	46	34	20
Certificate	126	44	28	28
Curricular Area				
Business	1,117	42	32	26
Communications	65	35	28	37
Engineering	907	38	35	27
Health	118	67	22	11
Public Service	193	61	24	15
Other	97	40	36	24

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

and general education as reasons for continuing education (Table 11). Whites, compared to minorities, and graduates, compared to nongraduates, had similar motivations for continuing education. Whites and graduates were more concerned with advancement in present jobs, skill improvement, and general education and satisfaction than were minorities and nongraduates. The latter were more motivated toward occupational change.

Higher percentages of associate degree and diploma graduates than certificate holders noted preparation for advancement in present jobs as a reason for continued education. Diploma graduates exceeded the other groups in concern for improving present job skills. AAS degree graduates surpassed diploma and certificate holders in their interest in general education and personal satisfaction.

Responses by curricular areas were fairly evenly distributed (Table 11). Communications students demonstrated the highest degree of concern with general education and personal satisfaction, while indicating the least interest of any group in improving job skills or meeting employer expectations.

Former students who had pursued further education were asked how closely it related to their earlier community college curriculum (Table 12). Three out of four responded that continued education had been either very much or somewhat related to previous study. Response patterns for sex and race were essentially the same as those for the total group. Graduates, associate degree holders, and health and public service students reported higher levels of relatedness than did their counterpart groups.

Discontinued Education

Respondents who had discontinued their course work at a community college were asked to give reasons for their decision (Table 13), and to indicate whether they planned to return (Table 14). In the following tabulation, nongraduates' reasons for discontinuing their studies are presented under three headings: positive reasons, negative reasons, and neutral reasons. Positive reasons are those which are compatible with completing educational objectives. Negative reasons are judged by the writers as direct barriers to or dissatisfaction with resuming education at a later time. Neutral reasons represent postponement of educational activities or a redirection of interest, with the option to resume education unmarred by the action. Since multiple reasons were permitted, the total is greater than 100 percent.

TABLE 13

Reasons for Nongraduates Discontinuing Attendance

Group	N	Percent by Response Category[a]												
		Employ-ment	Marr-iage	Military Service	Lack of Financ. Support	Transfer to Another College	Moved to Another Area	Lack of Transpor-tation	Com-pleted Educa. Goal	Personal Adjust. Prob.	Lack of Interest	Low Achieve-ment	Change of Educa. Goal	Other
Sex														
Male	2,122	33	16	20	16	7	5	3	7	12	17	9	7	17
Female	790	33	28	1	13	4	11	6	5	13	14	8	7	21
Total	2,912	33	19	15	15	6	7	4	6	12	16	9	7	18
Race														
White	2,544	33	19	15	14	6	7	3	6	11	17	8	7	18
Minority	368	29	19	14	23	5	6	10	5	18	14	14	8	17
Curricular Area														
Business	1,640	34	22	12	15	6	8	4	5	13	18	9	7	18
Communications	67	30	25	19	13	13	8	2	3	10	6	6	12	19
Engineering	943	32	16	20	17	5	5	3	9	11	16	10	8	18
Health	76	15	18	1	20	7	9	5	7	15	12	17	13	20
Public Service	159	28	9	15	6	11	9	1	7	11	7	7	8	23
Other	27	37	22	4	22	4	-	4	15	7	11	4	-	19

[a]More than one response possible, therefore, totals may not equal 100%.

Reasons for Discontinuing	Percent
Positive Reasons	
Transferred	6
Completed educational goal	6
	12
Negative Reasons	
Lack of interest	16
Lack of finances	15
Personal adjustment	12
Low achievement	9
Lack of transportation	4
	56
Neutral Reasons	
Employment	33
Marriage	19
Other, miscellaneous	18
Military service	15
Moved	7
Changed goal	7
	99

When the responses were analyzed by sex and race, some differences in motivation could be seen (Table 13). The proportion of women who discontinued their community college studies because of marriage, moving, and lack of transportation was about twice that of men. Military service and college transfer were more frequently listed by men. Minority respondents more than whites noted lack of financial support, lack of transportation, personal adjustment problems, and low achievement.

Students from various curricular areas gave different reasons for discontinuing their studies. Health students reported leaving the community college to seek employment only half as frequently as did other students. Public service students cited marriage about half as often as did the other groups. Lack of financial support was clearly lowest in the public service sector. College transfer was mostly noted by students in the communications and public service groups. Business, engineering, and health students indicated discontinuation for lack of interest more often than other students. Low achievement was most often noted by those in health programs. Changes in educational goals were more frequently cited by health and communications students.

Two of three former students who were nongraduates indicated that they intended to return to a community college for additional work (Table 14). More men than women (67% and 58%) and more minorities than whites (74% and 63%) planned further study at the community college. Responses across curricular areas were fairly even.

TABLE 14

Nongraduates' Intentions of Returning to the Community College

Group	N	Percent by Response Category[a]	
		Yes	No
Sex			
Male	1,984	67	33
Female	727	58	42
Total	2,711	65	35
Race			
White	2,365	63	37
Minority	346	74	26
Curricular Area			
Business	1,505	64	36
Communications	64	70	30
Engineering	868	64	36
Health	80	59	41
Public Service	170	79	21
Other	24	54	46

[a]Row totals may vary as much as ± 2 percent in several cases due to cumulative rounding error.

SUMMARY AND CONCLUSIONS

This section consists of a summary of findings, implications of results, and recommendations for future research. The summary is presented in terms of the seven research questions investigated in this report. Implications are drawn from selected findings which the writers deem worthy of further attention.

Summary of Findings

1. What types of employment and other postcollege endeavors have former students engaged in since leaving community colleges? Seventy-two percent of former students had found full-time employment (Table 1). When other full-time pursuits were included (i.e., military, housewife, full-time college), fully 90 percent of the respondents were gainfully occupied on a full-time basis. Five percent were employed part-time and three percent were unemployed.

Analyses by sex and race did not show large or unexpected differences. Women trailed men somewhat in full-time employment, but the percentage of women working part-time was twice that of men, and the percentage of women occupied in homemaking was 15 percent. About 10 percent fewer minority respondents were engaged in full-time activities. A greater percentage of minorities had part-time work, and proportionally more were unemployed (6% and 2%). There was little difference by either sex or race in percentage going on to full-time college study.

Some differences in postcollege endeavors were found across graduate and curricular variables. Greater percentages of graduates than nongraduates were employed full-time. Diploma graduates had higher rates of employment than either degree or certificate graduates. As expected, degree graduates led in full-time college enrollment. Among curricular areas, communications students were by far most frequently enrolled in college (20%). Health students, who are mostly women, led in part-time employment and homemaking activities.

2. What proportions have engaged in activities directly related to their community college training and education? The large majority of former students reported working in jobs related to their college training. The frequency of much or some job congruence increased from 60 percent for first jobs to 72 percent for present jobs (Tables 4 and 5).

In both first and present jobs, women, graduates, and whites reported a higher percentage of job congruence than did their

counterparts. The curricular areas of public service and health showed a higher degree of present job congruence than did other areas. In the public service field, good job congruence may be related to the tendency of law enforcement employees to attend community colleges while continuing their jobs. The great demand for services of trained personnel in the health field tends to result in a high percentage of job congruence for them.

3. What were their initial and present salaries? The median salary for initial jobs after community college was $5419; for present jobs the median had risen to $7158 (Tables 7 and 8). The data on former students' salaries are difficult to interpret because they fail to account for differences in work experience prior to community college enrollment. Information about prior work history might help to explain wage differences among certain groups.

Men and whites earned higher salaries, in both initial and present jobs, than did women and minorities. Nongraduates received higher initial and present salaries than did graduates--possibly a function of prior work experience. As expected, certificate graduates earned proportionally less than their diploma and degree counterparts in both initial and present jobs.

The salaries of former students in business and communications were substantially lower than salaries for those in public service, engineering, and health. This salary differential may be related to the higher demand for skills in public service, engineering, and health areas.

4. What proportions have found employment within their home localities or within Virginia? More than nine of ten former students were working either in Virginia or Washington, D.C. (Table 2). Over eight of ten were employed within 50 miles of their former community college (Table 3). Minorities and women were more frequently working in the District of Columbia; this may be due to the emphasis on equal opportunity in government offices.

5. What proportions have continued their education and how consistent was that continued education with their community college programs? Approximately half of the former students pursued some type of post-community college training ranging from employer training programs to baccalaureate study (Table 10). Somewhat greater proportions of men and graduates than women and nongraduates sought further training. Engineering and health areas had the highest percentages engaged in employer training experiences. Public service areas led in students still enrolled at the community college; this finding may be related to the prevalence of part-time study among police officers and other full-time public service employees. Well over half of the nongraduates planned to return to the community college, a factor which varied little with sex, race, or program of study (Table 14).

The primary reasons given for pursuing further training were general education and satisfaction, on-the-job advancement, and skill improvement (Table 11). Men, more than women, cited employer

expectations and desire for advancement as reasons for continuing education. While more minority and nongraduate respondents sought occupational changes, whites and graduates expressed more interest in job advancement and improving skills in present jobs.

Among types of graduates, AAS degree graduates exhibited by far the greatest interest in general education and personal satisfaction. Diploma graduates, much more than either AAS or certificate graduates, were oriented toward skill improvement and meeting employer expectations. Certificate graduates showed the greatest interest in changing occupation.

Three of four students who pursued further training reported that it had been at least somewhat related to their community college program (Table 12). Graduates reported a higher degree of relatedness, as did health and public service curricular groups. Degree graduates reported more relatedness between continued education and community college program than did diploma and certificate graduates.

6. What reasons were given by nongraduates for not continuing their community college programs? Employment was noted by one of three graduates as the reason for leaving community college. Other reasons, checked at about half the frequency of employment, included marriage, lack of interest, lack of financial support, military service, and personal adjustment.

There is a degree of cross-validation between stated postcollege activities (Table 1) and reasons cited for leaving community colleges (Table 13). For example, women tended both to have become homemakers (15%) and to have indicated marriage as reason for discontinuing attendance. Similarly, many men were engaged in military service, and a roughly equivalent number cited military service as reason for leaving college.

Minority respondents checked lack of financial support, personal adjustment problems, low achievement, and lack of transportation more frequently than did white respondents. These reasons are commonly associated with low-income groups and thus with minority group membership.

It should be noted that although twelve comprehensive reasons for leaving college were presented (Table 13), one in five students elected to check 'Other'. Either there are independent reasons for leaving which were not included in the checklist, or many students were unable to explain why they had left community colleges.

7. What differences in postcollege activities vary with sex, race, curriculum, graduation status, and type of graduation credential? These differences have been noted in the preceding six questions and throughout the Results section.

Implications

In the following discussion, no attempt is made to deal with all the results. Rather, certain findings are presented in relationship to one another in order to draw some tentative conclusions about issues believed to be of major importance to community college educators.

Community college students from minority groups did not consider their initial jobs as satisfactory as did whites. Approximately one of two minority respondents reported that their first jobs were unrelated to college training programs, compared to one of three whites. In listing reasons for continuing education, minorities showed more interest than whites in changing jobs and less concern with improving opportunities, skills, and abilities in current jobs. It seems, then, that more minorities initially accepted unsatisfying jobs with few perceived opportunities for improvement or advancement. Many minority respondents succeeded in changing to jobs that were better related to college curricula. Present job congruence was far more evenly distributed among minorities and whites than was first job congruence. Minority respondents whose present jobs were not related to curricula most often reported that they were not sufficiently qualified or that there were no jobs in their fields of preparation. More minorities than whites reported qualifying for new, unrelated jobs by continuing their education.

Former minority students also reported higher rates of unemployment and lower median salaries than whites. Six percent of minority respondents were unemployed, compared to two percent of whites. The difference between median incomes of whites and minorities rose from $538 for initial jobs after community college to $876 for present jobs.

An overall pattern of differential success by race in the job market is evident. Perhaps more resources can be mobilized at community colleges to counteract this pattern. Opportunities for learning about career opportunities and trends in the job market should be part of the overall educational program of community colleges. Counselors and placement personnel need to be aware of the differential success pattern, as do minority students. Placement services should include specific instruction in strategies for locating the best available jobs, developing resumes, and preparing for interviews.

Although women reported much greater job congruence for both first and present jobs than did men, a higher percentage of women reported no jobs in their field of preparation as reason for poor job congruence. A higher percentage of men reported working in another field because of better pay, a finding which may be related to salary differences for men and women. The difference between men's and women's median incomes rose from $1608 for initial jobs after college to $2621 for present jobs. The distribution of reported incomes shows that only one percent of the women earned initial salaries of $9000 and over (compared to 11% of the men) and that only two percent earned present salaries of $10,000 and over (compared to 21% of the men). Certainly there is more pressure on men to earn high salaries, both for status and support of dependents. However, increasing numbers of women have serious career interests and/or are supporting dependents.

Although nongraduate men earned considerably more than graduate men in present jobs, nongraduate women earned less than graduate women in both initial and present jobs. This difference for men and women may be related to relative ages of graduates and nongraduates by sex. Seventy-eight percent of male graduates were 25 or less at the time of the study, compared to 65 percent of male nongraduates. Thus, 13 percent more nongraduates had longer intervals between high school and college. Among the women the age difference by graduation status was almost negligible: 78 percent of the graduates and 76 percent of the nongraduates were 25 or less at the time of the study. Male nongraduates on the whole had more time to acquire work experience prior to attending community college than did male graduates, but no such pattern was found among women. Since nongraduate men reported higher incomes than graduate men, it seems likely that age is an underlying factor for the salary difference among men.

Although minorities reported more financial difficulties and adjustment problems than whites, in certain other areas they presented a more positive attitude toward community college education. A lower percentage of minorities than whites reported discontinuing attendance because of lack of interest, and three of four had intentions of returning to the community college. Lack of financial support, lack of transportation, personal adjustment problems, and low achievement were indicated far more frequently by minorities than whites as reasons for leaving college before graduating.

There seems to be need for more remedial education for entering students who do not possess adequate learning skills. Fourteen percent of the minority respondents and eight percent of the whites had discontinued studies because of low achievement. Extensive tutoring or other intensive remediation may be needed to enable these students to attain their goals. However, it is recognized that the developmental/remedial programs at the colleges have changed considerably since the period of enrollment which these respondents experienced.

Many of the findings for public service students can be related to characteristics of these people. Public service students tend to be men over 25 with prior work experience in police science. Many of them continue full-time employment locally while attending community college. It is not surprising, then, that public service students report least often discontinuing education because of marriage or lack of financial support and that they rank highest in salaries and percentages working near the community college.

Recommendations for Further Research

The writers recognize the need for further research in the area of occupational-technical program outcomes. Supplemental analyses of the data already collected could provide helpful information. Other questions could be fully dealt with only by collecting and analyzing additional data.

From the data already collected, the following research recommendation is made:

Personal and academic characteristics of former students need to be related more rigorously to their postcollege activities. The findings in this report were based on relationships of single factors to student outcomes. Sex, race, graduation status, type of graduation credential, and curricular area were successively and independently related to postcollege activities. To supplement this univariate analysis, there is value in conducting multivariate analysis to determine with greater accuracy the relative extents of relationships between each of these factors and postcollege activities.

The following research recommendations involve additional data collection but are closely related to the subject and findings of this report.

1. Age and prior work experience of former students, full-time and part-time attendance, and number of credit hours completed in occupational-technical programs need to be studied in relation to postcollege activities and achievements. The effects of community college education and training on former students may be affected by prior work experience and extent of exposure to occupational-technical courses. Increasing proportions of community college students are older adults with substantial work experience. As occupational-technical programs are traditionally designed for younger adults with little or no work experience, the effects of these programs on older adults should be investigated. Numbers of credit-hours in occupational-technical courses should also be taken into account for a more accurate evaluation of program effects on students.

2. The initial expectations of community college students need to be studied in relation to postcollege activities. Given the increasing diversity of students attending community colleges, it is necessary to question whether students who enroll in a certain program have similar expectations for the content of that program. Initial expectations may affect both college achievement and postcollege activities.

3. Reasons for discontinuing attendance need to be studied in relation to preventive intervention by community college personnel. Since so many students leave the community college before graduating, it is worthwhile to investigate ways of preventing students from dropping out, whenever their aspirations would be better served by continued college attendance. The roles and responsibilities of various college personnel for helping students to complete their programs should be examined and useful role modifications should be developed. Other means of preventing students from dropping out of the system unnecessarily need to be determined.

4. Postcollege achievement of former occupational-technical students should be compared with that of other students. Norm groups from different types of institutions such as technical institutes and traditional junior colleges might provide useful sources of comparison for occupational-technical students at community colleges. It could also be helpful to compare postcollege achievement of occupational-technical students to that of students in other community college programs. Such comparisons may be very useful in identifying the unique services provided by community college occupational-technical programs.

REFERENCES

Bushnell, D. C. Organizing for change: New priorities for community colleges. New York: McGraw-Hill, 1973.

Cross, K. P. Beyond the open door. San Francisco: Jossey-Bass, 1971.

Gaddis, G. W. Project "follow-up" interim report (ERIC No. ED 048 496). Salt Lake City: Utah Research Coordinating Unit for Vocational and Technical Education, 1970.

Gustilo, T. O. & Trufant, J. E. Profile of former occupational-technical students (Research Report No. 2). Richmond: Virginia Department of Community Colleges, 1974.

Hawaii community college vocational-technical follow-up studies, 1968-1971 (ERIC No. 066155). Honolulu: University of Hawaii, 1972.

Koos, L. V. The community college student. Gainesville: University of Florida Press, 1970.

Monroe, C. R. Profile of the community college. San Francisco: Jossey-Bass, 1972.

Research in education annual index 1970 (ERIC No. ED 031 605 042 060). Washington: U. S. Government Printing Office, 1970.

Research in education annual index 1971 (ERIC No. ED 042 061 054 390). Washington: U. S. Government Printing Office, 1971.

Research in education annual index 1972 (ERIC No. ED 054 391 066 620). Washington: U. S. Government Printing Office, 1972.

Snyder, F. A., Selgas, J., & Blocker, C. E. The employment of career graduates (ERIC No. 065 117). Harrisburg, Pennsylvania: Harrisburg Area Community College, 1972.

Status of spring 1971 graduates (ERIC No. ED 068 091). Portland, Oregon: Portland Community College, 1972.

Thornton, J. W., Jr. The community junior college (3rd ed.). New York: John Wiley & Sons, 1972.

Trufant, J. E., Kelly, S. J., & Pullen, P. T. Attitudes of former occupational-technical students toward the community college experience and postcollege activities (Research Report No. 4). Richmond: Virginia Department of Community Colleges, 1974.

BEST COPY AVAILABLE

APPENDIX A

COLLEGE DATA FORM

College ______________________ Code __________ [1]

Campus ______________________ Code __________ [2]

Person Completing Form ______________________

VIRGINIA COMMUNITY COLLEGE SYSTEM
DATA ELEMENTS FOR FORMER STUDENTS

PLEASE PRINT ALL ENTRIES

Date Prepared ______________ Page ______ of ______

[4] Soc al Security Number	NAME [5] Last	[6] First	[7] MI	HOME ADDRESS Number	[8] Street	[9] City	[10] State	[11] Zip	[12] Year of Birth	[13] Sex	[14] Home Residence	[15] Quarter Year First Enrolled	[16] Quarter Year Last Enrolled	[17] Curriculum First Enrolled	[18] Curriculum Last Enrolled	[19] Credits Earned	[20] Cumulative GPA	[21] Degree	[22] Year Graduated
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NOTE: Actual size of this form is 11" x 16 1/2"

APPENDIX B
SURVEY QUESTIONNAIRE

VIRGINIA COMMUNITY COLLEGE SYSTEM
SURVEY OF FORMER STUDENTS
SPRING, 1972

Dear Former Student:

Community colleges in Virginia are still in their early stages of growth, and we are searching for ways to improve our educational programs.

To help us, we ask you to complete this questionnaire. It requires information about your current activities and your earlier community college experience. It will require about 10 minutes of your time to complete. Your responses will be grouped with those of other former students, and will be used only for this study.

Please complete the questionnaire and return it to us within three days. A pre-addressed and stamped return envelope is enclosed for your convenience.

Thank you for your help.

Very truly yours,

Fred A. Snyder, Director
Research & Planning Division
Virginia Department of Community Colleges

DIRECTIONS:

USE PENCIL ONLY. MARK THE BOX ☒ OPPOSITE EACH ITEM THAT BEST REPRESENTS YOUR ANSWER(S) COMPLETELY ERASE ANY ANSWERS YOU WISH TO CHANGE.

(Please correct name and address if necessary)

1. (The following is needed as information about equal opportunity for education or employment.)

I consider myself as:

1 ☐ White
2 ☐ Black or Afro-American
3 ☐ American Indian
4 ☐ Oriental
5 ☐ Spanish surnamed American
6 ☐ Other (specify)_____

2. Show your father's and your mother's highest educational level.

	Father	Mother
Under 8 years	1 ☐	☐
Completed 8th grade	2 ☐	☐
Attended high school	3 ☐	☐
High school graduate	4 ☐	☐
Attended college	5 ☐	☐
Four-year college graduate	6 ☐	☐
Master's or higher degree	7 ☐	☐

3. Father's type of work. If he is retired or deceased, refer to his former job.

1 ☐ Clerical and Sales – bank teller, salesman, office or sales clerk, etc.
2 ☐ Managerial or Office Occupations – office or sales manager, bank officer, etc.
3 ☐ Professional – CPA, dentist, engineer, teacher, military officer, etc.
4 ☐ Proprietor or Owner – farm owner, owner of a small business, etc.
5 ☐ Semi-professional and Technical – engineering technician, dental technician, practical nurse, surveyor, etc.
6 ☐ Semi-skilled worker – machine operator, bus driver, meat cutter, etc.
7 ☐ Service worker – barber, policeman, waiter, fireman, etc.
8 ☐ Skilled worker or foreman – baker, carpenter, electrician, foreman, etc.
9 ☐ Unskilled worker – laborer, filling station attendant, farm worker, etc.
10 ☐ Unemployed
11 ☐ Unknown

CONTINUED ON NEXT PAGE ⟶

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4. Your Marital Status.

- Single
- Married
- Other

5. Mark the one item that best describes your present employment or related status.

- Full-time employment
- Part-time employment
- College full-time
- Military service
- Housewife
- Unemployed
- Other (specify)_____

IF YOU HAVE NEVER BEEN EMPLOYED FULL-TIME SINCE LEAVING THE COLLEGE, GO DIRECTLY TO QUESTION 14.

6. Show the state in which you presently work.

- Virginia
- Maryland
- West Virginia
- North Carolina
- Tennessee
- District of Columbia
- Kentucky
- Another state (specify)_____

7. Show the approximate distance of your present employment from your former community college.

- Up to 25 miles
- 25 – 49 miles
- 50 – 99 miles
- 100 miles and over

8. Was the curriculum you were enrolled in at the community college related to your first job? Your present job?

	First Job	Present Job
Yes, very much		
Yes, somewhat		
No, or very little		

9. If your present job is not related to your community college curriculum, please check each reason which applies.

- Could not find a job in field of preparation
- Found better paying job in another field
- Preferred to work in another field
- Qualified for new job by continuing my education
- Was not sufficiently qualified for a job in my field of college preparation
- Other (specify)_____

10. Please indicate both your initial yearly salary upon leaving the community college and your present salary. (This information will not be identified with you as an individual, but will be grouped with that from other former students.)

Initial Salary		Present Salary
	Up to $2,999	
	$3,000 – 3,999	
	$4,000 – 4,999	
	$5,000 – 5,999	
	$6,000 – 6,999	
	$7,000 – 7,999	
	$8,000 – 8,999	
	$9,000 – 9,999	
	$10,000 – 10,999	
	$11,000 – 11,999	
	$12,000 and over	

11. Please rate your satisfaction with your present job in terms of each of the aspects shown below. Mark one answer for each aspect.

	Superior	Good	Fair	Poor
a. Challenging and interesting work				
b. Relations with colleagues				
c. Salary				
d. Opportunity for advancement				
e. Overall aspects of your job				

12. Please mark the one source most helpful in getting your initial full-time job upon leaving the community college. Mark one only.

- [ ] Community college placement service
- [ ] College staff member other than a placement service
- [ ] Employer contact at the college
- [ ] State employment service
- [ ] Answered an advertisement
- [ ] Relative or friend
- [ ] Other (specify)_____

13. Please mark (X) each statement which shows your feelings about the help you obtained at the community college in getting your first job upon leaving.

- [ ] The placement office was helpful
- [ ] Faculty members were helpful
- [ ] Little help was given to me or others in my curriculum
- [ ] Faculty members were willing to help, but didn't seem to know what opportunities were available
- [ ] Job placement service was not adequate

ALL PERSONS SHOULD ANSWER QUESTIONS 14 THRU 22.

14. To what extent have you continued your education since leaving the community college? Mark each statement that applies.

- [ ] Still enrolled at the community college
- [ ] None
- [ ] Completed one or more employer training program
- [ ] Took courses at another two-year college
- [ ] Took courses at a four-year college or university
- [ ] Completed an associate degree
- [ ] Completed a bachelor's degree
- [ ] Completed master's degree or beyond
- [ ] Other (specify)_____

15. If you have continued your education since leaving the community college, please mark each reason for such further education or training which applies to you.

- [ ] To prepare for further job opportunities in my present occupation
- [ ] To improve my skills and abilities in my present job
- [ ] For my own general education and personal satisfaction
- [ ] To change occupation
- [ ] It is expected of me by my employer
- [ ] Other (specify)_____

16. Was the curriculum you were enrolled in at the community college related to your later study, if you have continued your education?

- [ ] Yes, very much
- [ ] Yes, somewhat
- [ ] No, or very little

17. Did you at any time change from one curriculum to another while at the community college?

- [ ] Yes
- [ ] No

18. If your answer to question 17 was Yes, please mark the reason(s) for changing your curriculum as noted below.

- [ ] Dissatisfied with curriculum
- [ ] Dissatisfied with instruction
- [ ] Low achievement
- [ ] Loss of interest
- [ ] Personal problem
- [ ] Little opportunity in this field
- [ ] Parents objected
- [ ] Counselor's advice
- [ ] A wrong choice of curriculum in the first place
- [ ] Changed career goal(s)
- [ ] Other (specify)_____

19. Would you recommend the community college to a person seeking to complete the same program you studied?

	Yes	No
	[ ]	[ ]

20. How well did the community college prepare you in each of the following aspects? Mark only one answer for each aspect.

	Superior	Good	Fair	Poor
a. Technical knowledge and understanding	[ ]	[ ]	[ ]	[ ]
b. Job or learning skills	[ ]	[ ]	[ ]	[ ]
c Getting along with people	[ ]	[ ]	[ ]	[ ]
d. Self-understanding	[ ]	[ ]	[ ]	[ ]
e. Knowledge about career opportunities in your field	[ ]	[ ]	[ ]	[ ]
f. Communication skills (oral or written)	[ ]	[ ]	[ ]	[ ]
g. General education	[ ]	[ ]	[ ]	[ ]

21. How valuable are each of these aspects of your community college education to you now? Mark only one answer for each aspect.

	Highly Valuable	Valuable	Some Value	Little or No Value
a. Technical knowledge and understanding	☐	☐	☐	☐
b. Job or learning skills	☐	☐	☐	☐
c. Getting along with people	☐	☐	☐	☐
d. Self-understanding	☐	☐	☐	☐
e. Knowledge about career opportunities in your field	☐	☐	☐	☐
f. Communication skills (oral or written)	☐	☐	☐	☐
g. General education	☐	☐	☐	☐

22. Please give your opinion about each of the following aspects of your community college experience. Mark only one answer for each aspect.

	Superior	Good	Fair	Poor
a. Shop and laboratory instruction	☐	☐	☐	☐
b. Academic instruction	☐	☐	☐	☐
c. Shop and laboratory facilities and equipment	☐	☐	☐	☐
d. All other college facilities	☐	☐	☐	☐
e. Counseling given to students	☐	☐	☐	☐
f. Social activities	☐	☐	☐	☐
g. Interest in students shown by faculty	☐	☐	☐	☐
h. Evaluation of students' performance by faculty	☐	☐	☐	☐
i. Overall	☐	☐	☐	☐

ONLY THOSE WHO EARNED A CERTIFICATE, DIPLOMA, OR ASSOCIATE DEGREE SHOULD ANSWER QUESTION 23.

23. In every occupational-technical curriculum, there is a "mix" of courses in (a) applied technical and skills preparation and (b) general education. Please show the proportional "mix" of such courses that you would like to see in your curriculum at your community college.

- ☐ O.K. as is. Don't change it.
- ☐ Increase the proportion of courses in technical and skills areas.
- ☐ Increase the proportion of courses in general education.

ONLY THOSE WHO DID NOT COMPLETE AN EDUCATIONAL PROGRAM AT THE COMMUNITY COLLEGE SHOULD ANSWER QUESTIONS 24 THRU 27.

24. What was your primary educational goal when you initially enrolled at the community college? Mark one only.

- ☐ Earn a certificate or diploma to improve my employment and career skills.
- ☐ Earn an associate degree or a higher degree
- ☐ Upgrade technical knowledge and skills in specific fields by taking just one or several courses
- ☐ Increase my general knowledge and level of education
- ☐ Other (specify)

25. Was the goal you noted above achieved before you left the community college?

☐ Yes ☐ No

26. What principal reason(s) made you decide to discontinue attendance at the community college? Mark each that applies.

- ☐ Employment
- ☐ Marriage
- ☐ Entered military service
- ☐ Lack of financial support
- ☐ Transferred to another college
- ☐ Moved to another area
- ☐ Lack of transportation
- ☐ Completed my educational goal
- ☐ Personal adjustment problem
- ☐ Lack of interest
- ☐ Low achievement
- ☐ Change in educational goal
- ☐ Other

27. Do you intend to return to a community college for additional work?

☐ Yes ☐ No

THANK YOU FOR YOUR ASSISTANCE

APPENDIX C

CURRICULAR AREAS

Business

Accounting Technology/Accounting
Data Processing (Program/Unit Record)
Data Processing (Mach. & Comp. Opr./Keypunch)
Business Management/General Business
Hotel, Restaurant & Institutional Management
Merchandising Management/General Merchandising
Real Estate Management
Stenography/Clerical Studies
Secretarial Science

Communications and Media

Commercial Art/Printing

Engineering

Architectural Technology
Aeronautical Technology
Automotive Technology
Auto Trades (Analysis & Repair, Body Repair, Diagnosis, Engine, Diesel, Auto Mechanics)
Chemical Technology
Civil Engineering Technology/Civil Technology
Drafting and Design Technology/Drafting and Design
Drafting Trades (Drafting, Mech., Arch., Struct.)
Industrial Management/Technology
Electronic Technology/Electrical Technology
Electronic Trades
Machine Technology/Trades
Marine Technology
Mechanical Engineering Technology/Mechanical Technology
Building Trades (Air Cond. and Refr., Masonry, Plbg., Sh. Metal, Weld., Carpentry)
Textile Management

Health Service

Dental Laboratory Technology/Dental Assistance
Medical Laboratory Technology
Medical Records Technology
Mental Health Technology
Mortuary Science
Nursing
Practical Nursing
Radiological Technology

Public Service

Community & Social Service Technology/Assistant
Fire Science/Firefighting
Recreation and Parks Leadership
Police Science/Corrections/Law Enforcement
Environmental Technology

Other

Agricultural Business Technology
Forest Technology
Teacher Aide (Library/Audio Visual)
Developmental/Unclassified