ACT RESEARCH REPORT

No. 37

37

October, 1970

PRACTICES AND OUTCOMES OF VOCATIONAL-TECHNICAL EDUCATION IN TECHNICAL AND COMMUNITY COLLEGES

Thomas G. Gartland
James F. Carmody

PUBLISHED BY THE RESEARCH AND DEVELOPMENT DIVISION

THE AMERICAN COLLEGE TESTING PROGRAM

P. O. BOX 168, IOWA CITY, IOWA 52240

ABSTRACT

A study of 2-year post-high school institutions offering vocational-technical education was conducted to provide more adequate information about institutional guidance and research programs. A questionnaire was sent to 351 vocational-technical schools that offered no transfer programs and a slightly different version was sent to 689 community or junior colleges offering both college transfer work and vocational-technical programs. Items sought information on the collection and use of standardized data, counseling services, involvement in institutional research, program completion and transfer rates of students, and graduates' success in acquiring employment directly related to their specialized education. Institutions that conducted follow-up studies on vocational-technical students were requested to return copies of these studies.

Vocational-technical schools collected standardized information more extensively and used such information for selection purposes more frequently than did community colleges. Community college counseling centers available to vocational-technical students were more heavily staffed in relation to the number of students served and were more comprehensive in scope than those maintained by vocational-technical schools. Most institutions engaged in institutional research to some extent. However, community colleges directed more attention toward demographic studies while vocational-technical schools concentrated more on studies of student satisfaction and success while in school as well as follow-up studies of students after leaving school. In regard to outcomes, students attending vocational-technical schools had higher program completion rates and were less likely to transfer from one program to another than were their counterparts in community colleges. Approximately 80% of the graduates of both types of institutions found work related to their training.

PRACTICES AND OUTCOMES OF VOCATIONAL-TECHNICAL EDUCATION IN TECHNICAL AND COMMUNITY COLLEGES

Thomas G. Gartland
James F. Carmody[1]

In recent years rapid technological change in most occupational areas has created a growing demand for highly trained and skilled personnel. There seems to be general agreement, however, that at present this demand is not being fully met. As late as 1964, only 10% of those completing their formal education below the baccalaureate level had training which prepared them for specific occupations (Venn, 1964, p. 23).

Most writers have looked to postsecondary vocational-technical education as a means of remedying this situation. For example, Venn (1964) has concluded that, "unless far more and better education on the semiprofessional, technical and skilled levels is soon made available to greater numbers of citizens, the national economy and social structure will suffer irreparable damage [p. 1]."

However, vocational-technical education faces the problems of a rapidly growing field. Little is known about the practices and outcomes that characterize effective and efficient education of this type—practices and outcomes which will be necessary to meet the demands society is placing on this field. In fact, little more is known about the practices and outcomes that currently prevail in vocational-technical education.

This study was undertaken for the purpose of obtaining some basic information about what is being done and what is being achieved by vocational-technical schools and by comprehensive community colleges offering programs in occupational fields. We compared the two types of institutions with respect to possible relevant factors such as size of enrollments, the collection and use of standardized information, counseling services, involvement in institutional research, program completion and transfer rates, and graduates' success in gaining employment appropriate to their training. We hope this survey may provide a point of departure from which the task of improving vocational-technical education can begin.

[1] The authors are indebted to Nancy S. Cole, Robert H. Fenske, and Gary R. Hanson for their advice and assistance in designing and reporting this study.

Method

A questionnaire designed for the study was sent to the principal officers of 689 community colleges; a slightly different version of the same basic questionnaire was used to survey the heads of 351 vocational-technical schools. These questionnaires are given in the appendix. Two separate mailing lists were compiled by consulting the following sources: *The Education Directory, Part 3, 1968-1969, Higher Education; Patterson's American Education, Part II; The College Bluebook 1969/70, Volumes 2 and 3; American Junior Colleges, 7th edition;* and *Technician Education Yearbook 1969-1970.*

Two-year institutions offering course work acceptable towards a baccalaureate degree as well as a 2-year, post-high school vocational-technical program were sent the community college questionnaire; thus, private junior colleges and public junior colleges were treated as one group of institutions. Institutions offering postsecondary vocational-technical programs but not offering college parallel work, area vocational schools, area vocational-technical schools, and technical institutes were treated as a single, separate group of institutions and were sent the vocational-technical school questionnaire. While an attempt was made to contact the entire population of institutions currently offering broad programs of post-secondary vocational-technical education in the United States and its territories, special purpose institutions such as barber colleges, aviation schools, schools of cosmetology, and similarly specialized schools were not included in either group.

Those institutions not returning questionnaires within 10 days of the initial mailing were sent follow-up letters; a second follow-up letter and a second copy of the questionnaire were sent to those still not responding after an additional 10 days had passed. Eventually, 560 (82%) community colleges and 278 (79%) vocational-technical schools returned questionnaires containing usable data.

In addition to the questionnaire, institutions which conducted follow-up studies on vocational-technical students after they had left school were asked to send copies of these studies, if available. Of the 1,040 institutions contacted, 45 (4.3%) returned studies. Some results contained in these studies were reviewed and summarized where possible.

Results

The mean total enrollments of community colleges and vocational-technical schools were compared. As expected, the community colleges generally have substantially larger enrollments than do vocational-technical schools. The two types of institutions were also compared with respect to their mean full-time vocational-technical student enrollments. Comparison of the data presented in Table 1 with that in Table 2 indicates that the difference between vocational-technical student enrollments in the two types of institutions is far less striking. It should be noted, however, that although vocational-technical students represent a minority of the students enrolled in community colleges, the majority of students in postsecondary vocational-technical education are, nevertheless, served by community colleges since there are approximately twice as many community colleges as vocational-technical schools.

Table 1

Mean Total Enrollments of Community Colleges and Vocational-Technical Schools

	Community Colleges		*Vocational-Technical Schools*	
	Mean	**S.D.**	**Mean**	**S.D.**
Total Enrollment	2,720	3,471	864	1,322
	N	**%[a]**	**N**	**%[a]**
Institutions Responding to Item	552	99	273	98

[a]These percentages are based on the total number of usable questionnaires.

Table 2

Mean Enrollments of Students in Vocational-Technical Programs Preparing Them for First Entry into an Occupation

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	Mean	**S.D.**	**Mean**	**S.D.**
Vo-Tech Program Enrollment	817	1,142	611	640
	N	**%[a]**	**N**	**%[a]**
Institutions Responding to Item	488	87	249	90

[a]These percentages are based on the total number of usable questionnaires.

Counseling Services

Institutions were asked whether or not they provided counseling to students enrolled in vocational-technical programs. As Table 3 indicates, 89% of the community colleges and 91% of the vocational-technical schools reported offering counseling services.

Table 3

Counseling for Vocational-Technical Students

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	**N**	%[a]
Counseling	477	89	251	91
No Counseling	60	11	24	9
	N	%[b]	**N**	%[b]
Institutions Responding to Item	537	96	275	99

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

The data presented in Table 4 show that virtually all institutions having counseling programs provided vocational-educational counseling to students. In addition, the majority of both types of institutions provided personal-adjustment counseling and maintained systems of faculty advising. However, in both instances, this was true of a higher proportion of community colleges than vocational-technical schools.

Table 4

Types of Counseling Offered

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	**N**	%[a]
Vocational-Educational	474	100	250	100
Personal-Adjustment	427	90	200	80
Faculty Advising	425	89	164	65
Other	40	9	20	8
	N	%[b]	**N**	%[b]
Institutions Responding to Item	474	99+	250	99+

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

As shown by the figures given in Table 5, 99% of the responding community colleges and 95% of the responding vocational-technical schools reported employing professional counselors to work with vocational-technical students. In terms of the number of counselors employed, however, this small gap between community colleges and vocational-technical schools appears to widen.

Table 6 indicates that the mean number of counselors employed by community colleges to work with vocational-technical students was over twice that of those employed by vocational-technical schools. In view of the vocational-technical student enrollment figures given in Table 2, it appears that community colleges generally maintained lower student to counselor ratios than did vocational-technical schools.

Table 5

Employment of Professional Counselors

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	**N**	%[a]
Do Employ Professional Counselors	433	99	188	95
Do Not Employ Professional Counselors	6	1	9	5
	N	%[b]	**N**	%[b]
Institutions Responding to Items	439	92	197	78

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Table 6

Number of Counselors Employed

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	Mean	**S.D.**	**Mean**	**S.D.**
Counselors Employed	4.32	4.50	1.85	2.10
	N	%[a]	**N**	%[a]
Institutions Responding to Item	439	92	197	78

[a]These percentages are based on the number of institutions to whom the item applies.

Of the community colleges and vocational-technical schools providing counseling services for vocational-technical students, 89% and 84% respectively reported using standardized instruments as part of their counseling programs (Table 7). However, community colleges and vocational-technical schools differed to a somewhat greater extent with respect to the types of tests they used in counseling. While similarily high proportions of both types of institutions used ability measures, the figures in Table 8 indicate that proportionately more community colleges than vocational-technical schools administered personality measures and interest inventories as part of their counseling procedures.

Table 7

Use of Standardized Instruments in Counseling

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Use Tests in Counseling	383	89	176	84
Do Not Use Tests in Counseling	47	11	34	16
	N	%[b]	N	%[b]
Institutions Responding to Item	430	91	210	84

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Table 8

Types of Tests Used in Counseling

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Ability Measures	318	83	151	86
Personality Measures	149	39	37	21
Interest Inventories	315	82	99	56
Other	60	16	34	19
	N	%[b]	N	%[b]
Institutions Responding to Item	383	100	176	100

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Community colleges also tended to use a wider variety of standardized instruments. While 78% of the community colleges reported using more than one type of instrument as part of the counseling process, only 51% of the vocational-technical schools reported doing so; 38% of the community colleges and 20% of the vocational-technical schools reported administering three or more different types of standardized instruments.

Institutions that reported not providing counseling for vocational-technical students were asked to indicate whether or not such programs would be significantly useful. Table 9 shows that while responses to this question were generally positive, a smaller proportion of vocational-technical schools than community colleges replied that counseling services for vocational-technical students would be significantly useful.

Table 9

Potential Usefulness of Counseling

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Counseling Would Be Helpful	56	92	18	75
Counseling Would Not Be Significantly Useful	5	8	6	25
	N	%[b]	N	%[b]
Institutions Responding to Item	61	100	24	100

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Standardized Information

In general, 2-year institutions offering vocational-technical programs have two sources of standardized test information concerning prospective and currently enrolled students: (a) test scores reported on the students' high school records, and (b) scores achieved by students on standardized instruments administered by or for the institutions themselves. The data shown in Table 10 indicate to what extent these two sources are employed. Vocational-technical schools used both sources of standardized information, rather than only one or none, more often than did community colleges. While 74% of the responding vocational-technical schools used both sources, only 48% of the community colleges reported doing so. Furthermore, more community colleges than vocational-technical schools reported using neither source for gathering standardized information about students enrolled in occupational programs.

Table 10

Use of Sources of Standardized Information

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Use H.S. Records Only	31	6	19	7
Use Instruments Administered by the Institution Only	179	34	40	15
Use Both Sources	256	48	197	74
Use Neither Source	65	12	11	4
	N	%[b]	N	%[b]
Institutions Responding to Item	531	95	267	96

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

Institutions were asked to indicate whether they administered standardized instruments to all vocational-technical students, to students enrolled in some but not all vocational-technical programs, or to no vocational-technical students. As the data in Table 11 indicate, nearly equal majorities of both types of institutions reported testing all vocational-technical students. However, a higher proportion of vocational-technical schools than community colleges reported testing students in some but not all vocational-technical programs. Thus, a slightly higher proportion of vocational-technical schools than community colleges used standardized instruments to some extent.

Table 11

Administration of Standardized Instruments by or for Institutions

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Test All Vo-Tech Students	362	66	176	64
Test Students in Some Programs	90	16	68	25
Do Not Test	93	17	31	11
	N	%[b]	N	%[b]
Institutions Responding to Item	545	97	275	99

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

Those institutions which reported testing either all vocational-technical students or students in some vocational-technical programs were asked to give the names of the instruments they administered. The seven most often named instruments were the same for both types of institutions and fell into three categories: academic ability tests, multiple ability tests, and interest inventories. However, as the data presented in Table 12 indicate, the frequencies with which specific instruments were used differed for the two types of institutions. While community colleges relied heavily on academic ability tests and interest inventories, the vocational-technical schools tended to make greater use of multiple ability tests such as the Differential Aptitude Test and the General Aptitude Test Battery.

Table 12

Seven Instruments Most Often Used by Institutions Administering Tests to All or Some Vocational-Technical Students

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
Academic Ability Tests	**N**	%[a]	**N**	%[a]
American College Test	244	54	41	17
Scholastic Aptitude Test	95	21	38	16
School and College Aptitude Test	97	21	22	9
Multiple Ability Tests	**N**	%[a]	**N**	%[a]
General Aptitude Test Battery	106	23	132	54
Differential Aptitude Test	52	11	95	39
Interest Inventories	**N**	%[a]	**N**	%[a]
Strong Vocational Interest Blank	99	22	7	3
Kuder Preference Record	139	31	61	25
	N	%[b]	**N**	%[b]
Institutions Responding to Item	452	100	243	99

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Only slight differences were found in the number of instruments administered. Approximately 66% of both types of institutions administered one to three instruments while only 7% of the institutions in each category administered seven or more instruments.

The majority of institutions administering standardized instruments reported doing so before the students enrolled. As the figures in Table 13 show, the differences between community colleges and vocational-technical schools in regard to when tests are administered were not substantial. However, they appeared to differ in terms of the purposes for which their testing activities were designed.

Table 13

Periods During Which Testing is Conducted

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
Periods	**N**	%[a]	**N**	%[a]
Before Enrollment	376	84	217	90
Immediately After Enrollment	98	22	50	21
During Counseling	119	26	44	18
Other	41	9	29	12
	N	%[b]	**N**	%[b]
Institutions Responding to Item	449	99	240	99

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

While the data presented in Table 14 indicate that similarly high proportions of both types of institutions used the information gained from test scores for counseling students, they differed somewhat in regard to the other purposes listed. A greater proportion of vocational-technical schools than community colleges reported using test results for selection purposes while community colleges more often than vocational-technical schools used such information for placement and acquiring summary descriptive data. Further examination of the data revealed that 79% of the community colleges and 80% of the vocational-technical schools used the standardized information resulting from testing activities for more than one purpose.

Table 14

Purposes Served by Standardized Information

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
Purposes	**N**	%[a]	**N**	%[a]
Selection	143	32	142	59
Placement	321	71	144	60
Counseling	414	92	212	88
Summary Descriptive Data	138	31	27	11
Other	16	4	19	8
	N	%[b]	**N**	%[b]
Institutions Responding to Item	450	99	242	99

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Institutions which reported administering tests were asked to indicate whether or not the instruments they used adequately fulfilled the purposes for which they were intended. The data presented in Table 15 show that the majority of institutions judged the instruments they administered to be adequate. However, 27% of the community colleges and 22% of the vocational-technical schools indicated that at least some of the instruments they administered were inadequate. Table 16 shows that the reason most often cited for dissatisfaction with these instruments was their inappropriateness for the type of student being tested.

Table 15

Adequacy of Instruments Administered

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Adequate	302	73	173	78
Some Adequate–Some Inadequate	61	15	34	15
Inadequate	50	12	16	7
	N	%[b]	N	%[b]
Institutions Responding to Item	413	91	223	91

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Table 16

Reasons for Judging Instruments as Inadequate

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Too Difficult to Use	14	14	2	4
Too Costly for Student	12	12	5	11
Too Costly for Institution	15	15	3	6
Inappropriate for Type of Student	60	60	33	70
Other	40	40	12	26
	N	%[b]	N	%[b]
Institutions Responding to Item	99	89	47	94

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

According to the data presented in Table 17, in both types of institutions a higher proportion of the users of multiple ability tests judged them as more adequately meeting their needs than did the users of academic ability tests.

Table 17

Perceived Adequacy of Different Types of Standardized Instruments

	Community Colleges (Vo-Tech Divisions)			*Vocational-Technical Schools*		
	Number of Judgments	**Number of Positive Judgments**	**Percent of Positive Judgments**	**Number of Judgments**	**Number of Positive Judgments**	**Percent of Positive Judgments**
Academic Ability Tests	311	262	84	86	67	78
Multiple Ability Tests	121	108	89	168	159	95
Interest Inventories	150	136	91	35	32	91

The institutions, which reported no administration of standardized tests to students in vocational-technical programs, were asked to cite their reasons for not doing so. The data presented in Table 18 show that the one reason most often cited for not administering tests to vocational-technical students was "none appropriate for type of student." (This result parallels the most common reason for standardized instruments being judged inadequate by institutions administering them.) Those institutions not administering standardized instruments were asked whether or not their possible future use would provide useful information. Table 19 shows that the majority of institutions indicated such instruments would be useful.

Table 18

Reasons for Not Administering Standardized Instruments

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	**N**	%[a]
Not Useful	15	18	5	17
Too Costly for Student	11	13	3	10
Too Costly for Institution	15	18	6	20
None Appropriate for Type of Student	35	42	17	57
Other	40	48	11	37
	N	%[b]	**N**	%[b]
Institutions Responding to Item	84	89	30	97

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Table 19

Potential Usefulness of Standardized Instruments

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	**N**	%[a]
Would Be Useful	48	74	16	70
Would Not Be Useful	17	26	7	30
	N	%[b]	**N**	%[b]
Institutions Responding to Item	65	70	23	74

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the number of institutions to whom the item applies.

Institutional Research

In order to gain information regarding the extent to which 2-year colleges and schools offering post-high school vocational-technical training involve themselves in institutional research, three items dealing with this topic were included in the questionnaire. First, the institutions were asked to indicate how often they conducted studies of student satisfaction and/or success while in school. As the data presented in Table 20 indicate, over 80% of both types of institutions reported conducting such studies. However, a greater proportion of vocational-technical schools than community colleges reported doing this regularly.

Table 20

Frequency of Studies of Student In-school Satisfaction and/or Success

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Never	92	19	44	18
Rarely	187	37	71	28
Regularly	220	44	137	54
	N	%[b]	N	%[b]
Institutions Responding to Item	499	89	252	83

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

A second question asked how frequently institutions conducted follow-up studies on vocational students who had left school and taken jobs. Here again the majority of institutions reported doing so. However, as the figures presented in Table 21 show, follow-up studies were conducted regularly by a greater proportion of both types of institutions than were studies of student satisfaction and/or success. Also the differences between community colleges and vocational-technical schools were more pronounced in regard to follow-up studies than they were in the case of satisfaction and/or success studies. While only 10% more of the vocational-technical schools than the community colleges regularly conducted studies of student satisfaction and/or success, the difference between the two with respect to follow-up studies widened to 18%.

Table 21

Frequency of Follow-up Studies

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Never	92	18	29	11
Rarely	141	28	33	12
Regularly	285	55	197	73
	N	%[b]	N	%[b]
Institutions Responding to Item	518	92	259	93

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

The last question concerning involvement in institutional research dealt with the compilation and usefulness of demographic data. Institutions were asked how frequently they summarized demographic data (such as age, family income, race, parents' education, etc.) on students for purposes such as an annual report. The results presented in Table 22 indicate that community colleges more often engaged in this type of research than did vocational-technical schools.

Table 22

Frequency with Which Institutions Summarize Demographic Data

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
	N	%[a]	N	%[a]
Never	104	21	74	32
Rarely	130	26	85	36
Regularly	271	54	76	32
	N	%[b]	N	%[b]
Institutions Responding to Item	505	90	235	85

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of the usable questionnaires.

Of both types of institutions who regularly conducted in-school studies of students, 99% reported they were useful. Similarly high proportions of institutions rarely or never conducting studies of student satisfaction or success indicated that such studies were or would be useful. Thus, regardless of the frequency with which these studies are conducted, the overwhelming majority of both types of institutions judged them as providing useful information (see Table 23).

Table 23

Perceived Usefulness of Different Types of Studies

	Community Colleges (Vo-Tech Divisions)		*Vocational-Technical Schools*	
Types of Studies	**N**	%[a]	**N**	%[a]
Students' Satisfaction and/or Success	454	98	225	97
Follow-up Studies	460	99	243	98
Demographic Summaries	420	93	169	80

[a]These percentages are based on the number of institutions who responded to the item.

Follow-up studies of students after leaving school were judged to be useful sources of information by 99% of the community colleges and 98% of the vocational-technical schools. The proportions of positive judgments did not vary appreciably between the two types of institutions in regard to the frequency with which such studies were conducted.

Judgments concerning the usefulness of demographic information for both types of institutions were directly related to the frequency with which such summaries were conducted. Overall, 93% of the community colleges and 80% of the vocational-technical schools indicated that demographic information is or would be useful. As indicated in Table 23, the information provided by all three types of studies was judged to be useful by the majority of the responding institutions. However, in relative terms the information provided by demographic studies appears to be viewed as being the least useful of the three types of information.

Educational Outcomes

Questionnaire results. Two sets of questions, one for community colleges and the other for vocational-technical schools, comprised the final sections of the questionnaires. In responding to the

Table 24

Responses of Community Colleges

	Mean Percent	*Standard Deviation*	*Number Reporting Information*		*Information Not Known*		*Number Responding*	
			N	%[a]	N	%[a]	N	%[b]
Students Completing College Parallel Programs	49.9	21.2	305	59	216	41	521	93
Students Transferring from College Parallel Program to Vo-Tech Program	11.5	12.5	211	41	304	59	515	92
Students Transferring from One Vo-Tech Program to Another	13.5	14.5	230	45	281	55	511	91
Vo-Tech Students Completing Some Program	59.1	23.4	331	62	201	38	532	95
Vo-Tech Graduates that Acquire Jobs Directly Related to Their Training	80.3	15.4	272	53	238	47	510	91

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

Table 25

Responses of Vocational-Technical Schools

	Mean Percent	*Standard Deviation*	*Number Reporting Information*		*Information Not Known*		*Number Responding*	
			N	%[a]	N	%[a]	N	%[b]
Students Transferring from One Vo-Tech Program to Another	6.3	6.4	193	76	62	24	255	92
Students Completing Program in Which Initially Enrolled	70.3	18.0	222	83	44	17	266	96
Graduates That Acquire Jobs Directly Related to Their Training	81.7	16.8	223	84	42	16	265	95

[a]These percentages are based on the number of institutions who responded to the item.

[b]These percentages are based on the total number of usable questionnaires.

questions, institutions were asked to respond "Not known" to the question if at least approximate information was not available. Community colleges were asked five questions and vocational-technical schools were asked three. The two additional questions asked community colleges dealt with students pursuing college parallel programs and were therefore deemed inappropriate for vocational-technical schools. However, the last three questions asked community colleges and those asked vocational-technical schools were quite similar and were used as a basis for comparing the tangible outcomes achieved by the two types of institutions. These questions dealt with transfer rates, program completion, and vocational-technical graduates' success in gaining employment directly related to their training. Tables 24 and 25 give summaries of the answers to these questions.

Vocational-technical graduates from both types of institutions were equally likely to gain employment related to their training. However, we noted differences between community colleges and vocational-technical schools with respect to students transferring from one vocational-technical program to another and vocational-technical students completing programs. The mean rate of students transferring from one vocational-technical program to another was higher for community colleges than vocational-technical schools. Mean program completion rates for the two types of institutions also appeared to differ. On the average, only 59.1% of the vocational-technical students enrolled in community colleges eventually completed some program, however, at least 70.3% of the vocational-technical students enrolled in vocational-technical schools were reported as having completed their programs.

Two questions concerned only community colleges. The mean completion rate for students enrolled in college parallel programs was 49.9% and the mean percentage of students initially enrolled in college parallel courses and subsequently transferring to vocational-technical programs was 11.5%.

Perhaps as significant as any of the figures already cited were the relative number of institutions able to supply the requested information. Apparently vocational-technical schools had greater access to the data requested than did community colleges. The proportions of institutions indicating "Not known" varied, according to the specific question, and ranged from 38 to 59% of the community colleges as compared to only 16 to 24% of the vocational-technical schools.

Results from institutional follow-up studies. Institutions were asked to return copies of any follow-up studies done on their students. Of the 838 institutions returning questionnaires, 103 returned some form of additional information. Often this information consisted of either a list of firms in which their vocational-technical graduates were currently employed or a copy of a form issued by each state's department of education. States using such forms collate the information they receive from individual institutions and forward it to the vocational-technical branch of the United States Office of Education. The latter, but not the former, were included along with more complete research studies to give a total of 45 usable sources of follow-up information about students (see Appendix E).

Summarizing the data contained in the studies received revealed that overall, at graduation, 68% of the graduates from vocational-technical programs were either employed or available for employment. This figure is, however, somewhat depressed by the finding that 9% of the graduates entered the military and approximately 13% continued their schooling as full-time students. Of those graduates who were employed or available for employment, 83% were working in the occupation for which they had been trained or a closely related field. Only 2.5% of those completing vocational-technical programs were unemployed at the time of the follow-ups.

Very few studies surveyed those students who had dropped out of vocational-technical programs. However, according to the information that was available, the attrition rate for vocational-technical students appeared to be between 35% and 40%. Apparently, dissatisfaction with the institution is not the only or even main reason for which vocational-technical students withdraw. A study undertaken by one institution, Greenville

Technical Education Center (1969), revealed that only 14.8% of those who withdrew did so because they were not making any progress or getting anywhere and only 12% of the withdrawals thought their courses had been of "little use" in preparing them for work. Of those who withdrew, 61% planned to re-enroll at some later date. In this and other studies at Harrisburg Area Community College (Snyder & Blocker, 1970) and Arizona Western College (Mitchell & Moorehead, 1968), the following were among the reasons vocational-technical students had for discontinuing before completing their programs: to attend another college, volunteered or was drafted for the Armed Forces, obtained employment, or completed objectives. At one school, the above reasons accounted for 55% of the withdrawals during the period under study.

Vocational-technical students tended to be extremely favorable in their evaluations of their institutions in preparing them for employment. According to a study conducted by Harrisburg Area Community College (Snyder & Blocker, 1969) 92% of the vocational-technical graduates indicated they would recommend the institution to a person seeking training in the program they had completed—a higher proportion of favorable reactions than found among graduates from the college parallel program. In general, the studies dealing with students' evaluation of their training indicated that vocational-technical students valued the training they had received at the institution they had attended, especially the part closely related to their chosen occupational fields.

Only one study, a survey conducted by Brandywine College (Devilbiss, 1969), provided employer reactions to the graduates of vocational-technical programs in their employ. This study indicated that 80% of the employers contacted judged graduates' performance on the job to be "exceptional" or "good" and 90% thought the vocational-technical graduates they employed had been adequately prepared for their positions.

Six institutions provided studies containing information about salaries earned by their former students (Eastern New Mexico, 1969; Hazard, 1968; Ochs, 1969; Quint, 1969, Snyder & Blocker, 1969; U.S. Office, 1969). Despite regional differences in salaries and costs of living, certain results regarding factors affecting the salaries of graduates of vocational-technical programs appeared consistently. Graduates employed in the field for which they were trained earned higher monthly salaries than those who were employed outside their field. Also former students taking jobs outside of the state in which they received their training acquired higher paying positions than those who remained in or near the area in which their school was located.

One study of students completing programs in 1968 (Quint, 1969), undertaken by American River College, indicated that salaries earned by vocational-technical program graduates may be related to age. In general, younger graduates tended to earn lower starting salaries than did older graduates.

Another study, a survey of students completing or withdrawing from vocational-technical programs during the 1968-1969 school year conducted by Wisconsin's District 11 Area Board of Vocational, Technical, and Adult Education (U.S. Office, 1969), reported that although the salaries earned by students enrolled in degree programs (2-year programs) were higher if they graduated and accepted employment within their field of training, the same did not hold true for students enrolled in diploma programs (less than 2-year programs). Salaries of students enrolled in diploma programs seemed to be the same whether or not they completed a program or accepted employment in occupations related to their training.

Institutions reported return rates for follow-up studies between 30% and 85%; the mean return rate was approximately 60%.

In general, post-high school institutions conducting follow-up studies on vocational-technical students viewed employment rates as being important indicators of successful programs. Beyond this, however, there appears to be little agreement among institutions in regard to the kinds of information about their graduates that would be useful in evaluating the programs which they offer.

Discussion

The findings reported in the preceding section indicated that community colleges and vocational-technical schools differed in a number of respects. Differences were observed in practices and outcomes achieved with vocational-technical students.

Counseling Services

Community colleges appeared to maintain counseling services that were more heavily staffed and broader in scope than those offered by vocational-technical schools. In addition to vocational-educational counseling, which was provided by almost all community colleges and vocational-technical schools maintaining counseling programs of any type, community colleges were more likely to include personal adjustment counseling and use faculty members as advisors. Also, among the institutions using standardized instruments as part of the counseling process, community colleges tended to use a wider range of instruments and more often administered personality measures and interest inventories than did vocational-technical schools.

The fact that more community colleges than vocational-technical schools appeared to maintain "open door" admissions policies (see Table 14) may help to explain the differences found between the two types of institutions. It is likely that such institutions attract substantial numbers of students who are essentially undecided as to which program they should enter. Ease of admission, low tuition costs, and other related factors common to most community colleges probably combine to attract some students without strong commitments to specific career goals and therefore in need of extensive counseling. Also, allowing or encouraging intra-institutional program changes would seem to increase the need for extensive counseling programs. In addition, community colleges deal with the group whom Burton Clark (1960) termed "latent terminals." These are students enrolled in college parallel programs who never actually transfer or graduate from 4-year institutions. According to Clark's study such students comprised 50% of all students enrolling at San Jose Junior College which in this respect appears to be fairly typical of community colleges in general. Counseling has been suggested as the necessary means to help and encourage this sizable group of students make more productive and profitable educational decisions. Since these factors appear to have less importance for vocational-technical schools it is not surprising that community colleges have felt a greater need to emphasize counseling than have vocational-technical schools.

Standardized Information

The two types of institutions differed in the extent to which standardized data were used. While similar proportions of both types of institutions tested all their students, a greater proportion of vocational-technical schools tested students in some programs and used test scores from high school records. Thus, overall, the vocational-technical schools made more use of standardized test scores.

There are several possible explanations for this result. One is that community colleges may not feel that high school records contain test scores relevant to students' potential for success in vocational-technical programs. Another is that if students are allowed to apply and are accepted for admission right up until courses begin, the time necessary for processing and effectively analyzing information would simply not be available. Community colleges for whom these considerations apply may therefore choose to allot their time and resources to other guidance practices.

On the other hand, Gleazer (1966) has suggested that some community colleges tend to treat vocational-technical education as an educational accommodation appropriate primarily for less able students. If Gleazer's observation is accurate, such colleges may view the use of standardized test information about vocational-technical students as unnecessary because it merely affirms their already accepted impression of low ability on the part of these students.

Vocational-technical schools, however, not faced with the problem of comparing vocational-technical curricula with college parallel programs, may use test scores to assess the diverse ability they see in their prospective students. Since vocational-technical schools, more often than community colleges, used standardized information for selection purposes, they may maintain admissions deadlines prior to actual course enrollment. This would allow them to use standardized information in developing curricula and enrolling suitable students.

Among those institutions that administered standardized instruments, community colleges and vocational-technical schools differed in regard to the types of instruments, their satisfaction with these instruments, and the relationships between their choice of instruments and their judgments as to the adequacy of these instruments. Community colleges relied more heavily on academic ability tests for their vocational-technical students than did vocational-technical schools. The latter were more likely to administer multiple ability tests. Both community colleges and vocational-technical schools generally judged the instruments they administered to be adequate. However, vocational-technical schools most often judged their most-used type of instrument (multiple ability tests) to be adequate while community colleges judged their most-used type of instrument (academic ability tests) to be adequate slightly less often than the multiple ability tests. Thus, community colleges more frequently used one type of test while more frequently judging another type of test as being adequate.

These findings may in part be related to the different organizational structures of the two types of institutions. While vocational-technical schools are for the most part concerned with preparing their students for entry into the work world, community colleges typically serve several functions. In addition to providing occupational training, community colleges also provide lower division college work for students planning to transfer to 4-year colleges or universities and in many instances provide continuing education of various types for adult members of the communities in which they are located. While vocational-technical schools can base decisions concerning testing practices, counseling, and institutional research solely in terms of the requirements of vocational-technical students, community colleges must consider the overall needs of their more diverse student populations in making such decisions.

It is likely that when the needs and interests of the various groups served by community colleges conflict, those of the majority, in most instances students enrolled in college parallel programs, dominate. This may explain why community colleges more often than vocational-technical schools choose to administer academic ability tests rather than multiple ability tests even while more often judging multiple ability tests to be adequate for vocational-technical students.

Institutional Research

Vocational-technical schools seem to be more involved in institutional research than are community colleges. Higher proportions of vocational-technical schools than of community colleges reported that they regularly conducted studies of student satisfaction and/or success while in school and follow-up studies of students after they left school and took jobs. However, community colleges were found to be more likely than vocational-technical schools to regularly collect and summarize demographic data.

Several possible explanations for these differences can be suggested. Vocational-technical schools may be more closely allied to the industries and businesses for which their students are being trained. Both more active job placement programs and greater accountability for the on-the-job success of their students could lead naturally to

student follow-up. On the other hand, perhaps it is simply federal reporting requirements which account for the greater likelihood of vocational-technical schools to follow up. Since vocational-technical schools appear to use selective admissions more often than community colleges, they may view studies of student satisfaction and/or success and follow-up studies as necessary to provide information for the evaluation of their selection procedures. While community colleges indicated that information of this type was useful they may have accorded it lower priority because they are not completely free to act on such information if they are to retain their "open door" character. In other words, many community colleges may have to deal with students regardless of their potential or probability for future success. The fact that community colleges rated follow-up studies as useful indicates that they recognize potential value of such studies for program development and the evaluation of instruction. Another possible reason for the lower level of involvement in institutional research on the part of community colleges may be related to the rapid growth in numbers of these institutions in recent years. It has been estimated that 50 new community colleges have been established each year for the past decade (Gleazer, 1968). It is likely that many of the institutions contacted for this study have not been in existence long enough to develop a comprehensive program for institutional research.

Demographic studies may be considered more necessary and useful by community colleges than by vocational-technical schools because of the community service orientation of many community colleges (Fields, 1962). In general, community colleges are expected to serve the interests and needs of the various subgroups residing within the communities in which they are located. Demographic studies may provide the means through which community colleges can judge their performance in this respect. Vocational-technical schools having a more specialized function, may not attach the same importance to demographic data as do community colleges.

Another factor that may result in the greater use of demographic data by community colleges is that a higher proportion of community colleges than vocational-technical schools reported participating in The American College Testing Program. As part of this participation they are routinely supplied demographic summaries of their student populations through the ACT Class Profile Service.

Educational Outcomes

Questionnaire results. The responses given by community colleges and vocational-technical schools to similar questions concerning program completion and transfer rates suggest that the two types of institutions differ in regard to outcomes as well as various practices. The fact that vocational-technical schools were more often able to answer these questions than were community colleges is consistent with, and may be a direct result of, the former's greater involvement with institutional research. Specific differences in outcomes between community colleges and vocational-technical schools may be explained in a number of ways. The finding that students attending vocational-technical schools have higher completion rates than those enrolled in community college vocational-technical programs may mean that vocational-technical schools deal with vocational-technical education in a more efficient and effective manner than do community colleges. However, since vocational-technical schools appear to be more selective than are community colleges, the two types of institutions may be dealing with dissimilar vocational-technical student populations. Community colleges may be serving a higher proportion of the less well prepared students than are vocational-technical schools. If this is true, it is not surprising that community college completion rates would, on the average, be somewhat lower than those of vocational-technical schools. Furthermore, the results indicating that students enrolled in community college vocational-technical programs more often transfer from one program to another than do students attending vocational-technical schools suggest that students in vocational-technical schools are more vocationally mature, in the sense that they have made firmer vocational decisions at an earlier stage, than their counterparts in community colleges. Students having strong commitments to an occupational goal would probably exhibit a greater tendency to complete

the programs in which they enroll.

However, although community colleges and vocational-technical schools offer programs with similar titles some aspects of these programs may differ considerably. For example, community colleges may require more general education courses than do vocational-technical schools. In fact some observers (Venn, 1964 and Thornton, 1966) have concluded that occupational education may be better carried out by comprehensive community colleges than vocational-technical schools because the latter have tended to neglect the importance of general education. While these courses may have no particular effect on the completion rates of students enrolled in some programs such as business, health occupations, or engineering technology, such academic course work may serve to discourage students who might otherwise succeed in programs emphasizing manual skills such as welding, auto body repair work, or plumbing.

Results of institutional follow-up studies. Due to the relatively low number of institutions sending copies of their follow-up studies and the fact that individual institutions pursued different questions regarding their vocational-technical graduates, only limited conclusions can be drawn. The success of graduates in acquiring employment related to their training was, however, one area with which virtually all of the studies dealt. In this respect the findings reported in the follow-up studies supported those revealed by the questionnaires. Both sources indicated that approximately 80% of the students completing vocational-technical programs were able to secure jobs that were closely related to their training.

Additional information derived from the follow-up studies indicated that only 2.5% of the graduates available for employment at the time of the follow-ups were unemployed. This figure is lower than the national unemployment rate as of January, 1969 which was 3.3% and is substantially lower than the 5.2% national unemployment rate for persons between 20 and 24 years of age (Unemployment Rates, 1970). If representative, these statistics provide a favorable commentary on the worth of vocational-technical education in assisting the individual in finding employment.

Although only a few institutions sent follow-up studies dealing specifically with students who had dropped out of vocational-technical programs, the studies available suggested that care should be employed in interpreting the meaning of attrition in regard to vocational-technical education. While for academic education "dropping out" has come to connote failure on the part of the student or the institution, this appears to be less true of vocational-technical education. According to the studies received, relatively few students withdrew due to dissatisfaction with their school or lack of progress in their programs. Over 20% of those withdrawing at one school reported doing so because they had completed their objectives or had gained employment. Another 15% volunteered for or were drafted by the Armed Forces; a slightly larger percentage withdrew in order to attend another college or school. These findings, although very limited, suggest that probably most students who withdrew from vocational-technical programs had neutral or even positive reasons for doing so. If this is generally true, it would not seem adequate to judge the success or effectiveness of an institution's involvement in occupational education only in terms of its program completion rates.

Of the studies conducted only one attempted to assess employers' evaluations of the graduates of vocational-technical programs they had in their employ. The apparent lack of interest in this area is surprising since it is likely that detailed evaluations of program graduates by employers would provide institutions with valuable information concerning the effectiveness and relevance of their occupational curricula. While in this one study the results were quite positive, this may not be the case for all institutions or all programs. To assume that success in training and on-the-job success are synonymous can be misleading. Institutions not engaging in this area of research may be ignoring an important source of information.

A few institutions conducted studies that gained information concerning the salaries earned by their graduates. One study contained data indicating that the starting salaries earned by graduates were strongly related to age; younger graduates averaged lower starting salaries than did older graduates. Another study revealed that although starting salaries of students who had enrolled in 2-year programs were higher if they

completed their programs and accepted employment related to their training, this was not true of students enrolling in 1-year programs. In the latter starting salaries appeared to be unaffected by whether or not programs had been completed or employment was in occupations related to training.

Since size of salary is one important criterion of personal as well as social and economic success it is odd that it has been afforded so little attention. As the first study suggests, earnings may be related to a number of factors other than the individual's competence and training in a particular area. It would be useful for institutions to know what these factors are and which ones are within their control or the control of their students and which ones are not. The second study suggests that in some occupational areas, those requiring relatively little training, there may be a natural ceiling limiting the financial reward any formal specialized educational program can bring.

Conclusion

While the results of this study illustrate several differences in the two types of postsecondary institutions offering vocational-technical education, they actually raise many more questions than they answer. Community colleges and vocational-technical schools are often quite different in structure, function, and purpose, but the effect and meaning of these differences are only speculative. With more information on what the schools presently do, the kind of information available in this study, we can begin to assess the more important questions of why they do what they do and what the effects of their actions are on students in vocational-technical education programs.

References

Clark, B. R. *The open door college.* New York: McGraw-Hill, 1960.

The college bluebook 1969/70. (13th ed.) Vol. 2 & 3. New York: CCM Information Corporation, 1969.

Devilbiss, D. E. Brandywine College second annual follow-up study: The class of 1969. Unpublished manuscript. Wilmington, Del.: Brandywine College, 1969.

Eastern New Mexico University, Roswell Campus. Information report. Unpublished manuscript. Roswell, N.M.: Author, 1969.

Fields, R. R. *The community college movement.* New York: McGraw-Hill, 1962.

Gleazer, E. J., Jr. Occupational education and society. In *Emphasis: Occupational education in the two-year college.* Washington, D.C.: American Association of Junior Colleges, 1966.

Gleazer, E. J., Jr. (Ed.) *American junior colleges.* (7th ed.) Washington, D.C.: American Council on Education, 1967.

Gleazer, E. J., Jr. *This is the community college.* New York: Houghton Mifflin, 1968.

Greenville Technical Education Center. Dropouts: A follow-up, 1968-1969. Unpublished manuscript. Greenville, S.C.: Author, 1969.

Hazard Area Vocational-Technical School. Follow-up survey on 1967-68 Hazard Vocational School graduates. Unpublished manuscript. Hazard, Ky.: Author, 1968.

Mitchell, J. A., & Moorehead, R. *A study of full-time students who discontinued their attendance at A.W.C. after attending one or both semesters of the 1966-67 school year.* Yuma, Ariz.: Arizona Western College, 1968.

Ochs, A. Fashion merchandising program evaluation by former students at Ellsworth Junior College in Iowa Falls, Iowa, from 1965-69. Unpublished manuscript. Emporia, Kan.: Kansas State Teachers College, 1969.

Office of Education, U.S. Department of Health, Education, and Welfare. *Education directory, 1968-1969/part 3.* Washington, D.C.: U.S. Government Printing Office, 1968.

Patterson's American education, Vol. LXV, part II. Mount Prospect, Ill.: Educational Directories Inc., 1968

Quint, L. Follow-up survey of 1968 graduates. Unpublished manuscript. Sacramento, Calif.: American River College, 1969.

Snyder, F. A., & Blocker, C. E. *A profile of graduates. Research Report No. 2.* Harrisburg, Pa.: Harrisburg Area Community College, 1969.

Snyder, F. A., & Blocker, C. E. *A profile of non-persisting students. Research Report No. 3.* Harrisburg, Pa.: Harrisburg Area Community College, 1970.

Technician education yearbook 1969-1970. Ann Arbor, Mich.: Prakken, 1969.

Thornton, J. W., Jr. *The community junior college* (2nd ed.) New York: Wiley, 1966.

Unemployment rates, by age and sex, seasonally adjusted. *Monthly Labor Review,* 1970, **93 (2)**, 91.

U.S. Office of Education follow-up study 1968-69 students. Unpublished manuscript. Sheboygan, Wis.: Area Board of Vocational, Technical and Adult Education—District 11, 1969.

Venn, G. *Man, education, and work.* Washington, D.C.: American Council on Education, 1964.

Additional Studies Not Cited

Bucks County Technical School. *A follow-up study of graduates from 1959 through 1968.* Fairless Hills, Pa.: Author, 1969.

Cohen, I. Borough of Manhattan Community College, analysis of graduate questionnaire. Unpublished manuscript. New York: Borough of Manhattan Community College, 1967.

Gold, B. K. *Follow-up study of the 1968 graduating class. Research Study No. 69-8.* Los Angeles: Los Angeles City College, 1969.

Nordgaard, W. M. The North Dakota State School of Science placement report: 1968-69 school year. Unpublished manuscript. Wahpeton, N.D.: North Dakota State School of Science, 1969.

Pucel, D. J., & Nelson, H. J. Project Mini-Score: An interim report 1966-1969. Paper presented at the American Vocational Association Convention, Boston, December, 1969.

Snyder, F. A., & Blocker, C. E. *A profile of students, Research Report No. 1.* Harrisburg, Pa.: Harrisburg Area Community College, 1969.

APPENDIXES

APPENDIX A
ACT VOCATIONAL-TECHNICAL SCHOOL QUESTIONNAIRE

Name of Institution _____ City _____ State _____

1. *How many students (head count) are enrolled in your institution?* _____
2. *How many of your students are enrolled in vocational-technical programs preparing them for first entry into an occupation?* _____
3. *Does your institution use scores from standardized tests available from the student's high school record?* _____Yes _____No
4. *Does your institution systematically acquire information about your students through the use of standardized instruments (tests, inventories, questionnaires, etc.)?*

_____Yes, on all students

_____Yes, on students in some programs

Please specify which programs: _____

_____No

Please check instruments used; write in those not listed.

_____ACT
_____CGP
_____DAT
_____GATB
_____MMPI
_____SAT
_____SCAT
_____SVIB
_____Kuder Preference Record
_____Edwards Personality Inventory
Others: _____

When are these instruments administered?

_____Before enrollment
_____Immediately after enrollment
_____When the student comes for counseling
_____Other; please explain: _____

How is this information used? (check as many as apply)

_____For selection
_____For counseling
_____For placement
_____For summary descriptive data about the institution
_____Other; please explain: _____

Are some of the instruments adequate for your purposes?

_____Yes

Which ones? _____

_____No

Which ones? _____

Why not?

_____Too difficult to use
_____Too costly for student
_____Too costly for institution
_____Inappropriate for our students
_____Other; explain: _____

Why not?

_____Not useful
_____Too costly for student
_____Too costly for institution
_____None appropriate for type of student
_____Other; explain: _____

Would the use of standardized instruments provide helpful information?

_____Yes _____No

What types of instruments? _____

THE AMERICAN COLLEGE TESTING PROGRAM

5. *Does your institution provide counseling for its students?*

_____Yes

What type?
_____Vocational-educational
_____Personal adjustment
_____Faculty advising
_____Other

Are standardized instruments used in counseling your students?
_____Yes, ability tests
_____Yes, personality tests
_____Yes, interest inventories
_____Yes, other: _____
_____No

*How many professional counselors do you have?*_____

_____No

Would counseling be significantly useful to your students?
_____No
_____Yes; in what way?_____
_____
_____
_____
_____

6. *How frequently does your institution conduct studies of student satisfaction and/or success while in school?*

_____Never

Would such studies be useful?
_____Yes _____No

_____Rarely _____Regularly

Are such studies useful?
_____Yes _____No

7. *How frequently does your institution conduct follow-up studies on its vocational-technical students after they leave school and take a job?*

_____Never

Would such follow-up studies be useful?
_____Yes _____No

_____Rarely _____Regularly

Are such follow-up studies useful?
_____Yes _____No

8. *How frequently does your institution summarize demographic information on its student body (such as age, family income, race, parents' education, etc.) for purposes such as an annual report?*

_____Never

Would such summary demographic information be useful?
_____Yes _____ No

_____Rarely _____Regularly

Is such summary demographic information useful?
_____Yes _____No

For questions 9 through 11 give approximate answers if precise data are not available. If approximate information is not available, check "Not known."

9. *What percentage of your students complete the programs in which they initially enroll?*_____ _____Not known
10. *What percentage of your students transfer out of their original program to another one at your institution?*_____ _____Not known
11. *Of the students who complete programs, what percentage acquire jobs directly related to their training?* _____ _____Not known

Thank you for your cooperation. Please mail the questionnaire in the envelope provided to:

Research and Development Division
The American College Testing Program
P. O. Box 168
Iowa City, Iowa 52240

THE AMERICAN COLLEGE TESTING PROGRAM

APPENDIX B

ACT COMMUNITY COLLEGE QUESTIONNAIRE ON VOCATIONAL-TECHNICAL STUDENTS

Name of Institution _____ **City** _____ **State** _____

1. *How many students (head count) are enrolled in your institution?* _____
2. *How many of your students are enrolled in vocational-technical programs preparing them for first entry into an occupation?* _____
3. *Does your institution use scores from standardized tests given on vocational-technical students' high school record?* _____Yes _____N
4. *Does your institution systematically acquire information on your vocational-technical students through the use of standardized instruments (tests, inventories, questionnaires, etc.)?*

_____Yes, on all such students

_____Yes, on students in some programs

Please specify which programs: _____

_____No

Please check instruments used; write in those not listed.

_____ACT
_____CGP
_____DAT
_____GATB
_____MMPI
_____SAT
_____SCAT
_____SVIB
_____Kuder Preference Record
_____Edwards Personality Inventory
Others: _____

When are these instruments administered?

_____Before enrollment
_____Immediately after enrollment
_____When the student comes for counseling
_____Other; please explain: _____

How is this information used? (check as many as apply)

_____For selection
_____For counseling
_____For placement
_____For summary descriptive data about the institution
_____Other; please explain: _____

Are some of the instruments adequate for your purposes?

_____Yes
Which ones? _____

_____No
Which ones? _____

Why not?

_____Too difficult to use
_____Too costly for student
_____Too costly for institution
_____Inappropriate for type of student
_____Other; explain: _____

Why not?

_____Not useful
_____Too costly for student
_____Too costly for institution
_____None appropriate for type of student
_____Other; explain: _____

Would the use of standardized instruments provide helpful information?

_____Yes _____No

What types of instruments? _____

THE AMERICAN COLLEGE TESTING PROGRA

. *Does your institution provide counseling for vocational-technical students?*

_____Yes

What type?
_____Vocational-educational
_____Personal adjustment
_____Faculty advising
_____Other

Are standardized instruments used in counseling these students?
_____Yes, ability tests
_____Yes, personality tests
_____Yes, interest inventories
_____Yes, other:
_____No

*How many professional counselors do you have for these students?*_____

_____No

Would counseling be significantly useful to vocational-technical students?
_____No
_____Yes; in what way?_____

How frequently does your institution conduct studies of student satisfaction and/or success while in school?

_____Never

Would such studies be useful?
_____Yes _____No

_____Rarely _____Regularly

Are such studies useful?
_____Yes _____No

How frequently does your institution conduct follow-up studies on its vocational-technical students after they leave school and take a job?

_____Never

Would such follow-up studies be useful?
_____Yes _____No

_____Rarely _____Regularly

Are such follow-up studies useful?
_____Yes _____No

How frequently does your institution summarize demographic information on its student body (such as age, family income, race, parents' education, etc.) for purposes such as an annual report?

_____Never

Would such summary demographic information be useful?
_____Yes _____No

_____Rarely _____Regularly

Is such summary demographic information useful?
_____Yes _____No

For questions 9 through 13 give approximate answers if precise data are not available. If even approximate information is not available, check "Not known."

. *Of the students who enroll in college parallel programs, what percentage successfully complete them?* _____ _____Not known

. *What percentage of college-parallel students transfer from college parallel to vocational-technical programs?*_____ _____Not known

1. *What percentage of vocational-technical students transfer out of their original program to another program at your school?*
_____ _____Not known

2. *What percentage of vocational-technical students complete some program at your school?*_____ _____Not known

3. *Of the students who complete vocational-technical programs, what percentage acquire jobs directly related to their training?*
_____ _____Not known

Thank you for your cooperation. Please mail the questionnaire in the envelope provided to:

Research and Development Division
The American College Testing Program
P. O. Box 168
Iowa City, Iowa 52240

THE AMERICAN COLLEGE TESTING PROGRAM

Appendix C
Community and Junior Colleges

ALABAMA

Alexander City State Jr. College, Alexander City
Enterprise State Jr. College, Enterprise
Gadsden State Jr. College, Gadsden
Jefferson Davis State Jr. College, Brewton
Jefferson State Jr. College, Birmingham
John C. Calhoun Technical School, Decatur
Northwest Alabama State Jr. College, Phil Campbell
Patrick Henry State Jr. College, Monroeville
Wenonah State Jr. College, Birmingham
William L. Yancey State Jr. College, Bay Minette

ALASKA

Anchorage Community College, Anchorage
University Alaska Juneau Douglas Community College, Juneau

ARIZONA

Arizona Western College, Yuma
Cochise College, Douglas
Eastern Arizona College, Thatcher
Glendale Community College, Glendale
Maricopa Technical College, Phoenix
Mesa Community College, Mesa
Missionary Aviation Institute, Glendale
Phoenix College, Phoenix

ARKANSAS

Arkansas State University—Beebe Branch, Beebe
Phillips County Community College, Helena
Westark Jr. College, Fort Smith

CALIFORNIA

Allan Hancock College, Santa Maria
American River College Main Campus, Sacramento
American River College Placerville Center, Placerville
Antelope Valley College, Lancaster
Bakersfield College, Bakersfield
Barstow College, Barstow
Butte Jr. College, Durham
Cabrillo College, Aptos
Canada College, Redwood City
Cerritos College, Norwalk
Chabot College, Hayward
Chaffey College, Alta Loma
Citrus College, Azusa
City College of San Francisco, San Francisco
College of the Desert, Palm Desert
College of Marin, Kentfield
College of the Redwoods, Eureka
College of San Mateo, San Mateo
College of the Sequoias, Visalia
College of the Siskiyous, Weed
Columbia Jr. College, Columbia
Compton College, Compton
Contra Costa College, San Pablo
Cuesta College, San Luis Obispo
Cypress College, Cypress
De Anza College, Cupertino
Diablo Valley College, Pleasant Hill
El Camino College, Torrance
Foothill College, Los Altos Hills
Fresno City College, Fresno
Fullerton Jr. College, Fullerton
Gavilan College, Gilroy
Glendale College, Glendale
Golden West College, Huntington Beach
Grossmont College, El Cajon
Hartnell College, Salinas
Laney College, Oakland
Lassen College, Susanville
Long Beach City College, Long Beach
Los Angeles City College, Los Angeles
Los Angeles Harbor College, Wilmington
Los Angeles Pierce College, Woodland Hills
Los Angeles Southwest College, Los Angeles
Los Angeles Trade & Technical College, Los Angeles

Los Angeles Valley College, Van Nuys
Merced Jr. College, Merced
Merritt College, Oakland
Minitt College, Oakland
Mira Costa College, Oceanside
Modesto Jr. College, Modesto
Monterey Peninsula College, Monterey
Moorpark Jr. College, Moorpark
Mount San Antonio College, Walnut
Mt. San Jacinto College, Gilman Hot Springs
Ohlone College, Fremont
Orange Coast College, Costa Mesa
Palomar College, San Marcos
Palo Verde College, Blythe
Pasadena City College, Pasadena
Porterville College, Porterville
Reedley College, Reedley
Rio Hondo Jr. College, Whittier
Riverside City College, Riverside
Sacramento City College, Sacramento
San Bernardino Valley College, San Bernardino
San Diego Jr. College, San Diego
San Joaquin Delta College, Stockton
San Jose City College, San Jose
Santa Ana College, Santa Ana
Santa Barbara City College, Santa Barbara
Santa Monica City College, Santa Monica
Santa Rosa Jr. College, Santa Rosa
Shasta College, Redding
Sierra College, Rocklin
Solano College, Vallejo
Southwestern College, Chula Vista
Taft College, Taft
Victor Valley College, Victorville
West Hills College, Coalinga
West Valley College, Campbell

COLORADO

Aims College, Greeley
Arapahoe Jr. College, Littleton
Colorado Mountain College, Glenwood Springs
Lamar Jr. Community College, Lamar
Mesa College, Grand Junction
Otero Jr. College, La Junta
Trinidad State Jr. College, Trinidad

CONNECTICUT

Housatonic Community College, Stratford
Manchester Community College, Manchester
Mattatuck Community College, Waterbury
Middlesex Community College, Middletown
Norwalk Community College, Norwalk
South Central Community College, New Haven

DELAWARE

Delaware Technical & Community College, Georgetown
Wesley College, Dover

DISTRICT OF COLUMBIA

Washington Technical Institute, Washington

FLORIDA

Brevard Jr. College, Cocoa
Broward Jr. College, Ft. Lauderdale
Central Florida Jr. College, Ocala
Chipola Jr. College, Marianna
Daytona Beach Jr. College, Daytona Beach
Edison Jr. College, Fort Myers
Florida Jr. College at Jacksonville, Jacksonville
Gulf Coast Jr. College, Panama City
Hillsborough Jr. College, Tampa
Lake City Jr. College & Forest Ranger School, Lake City
Lake-Sumter Jr. College, Leesburg
Manatee Jr. College, Bradenton
Miami-Dade Jr. College, Miami
North Florida Jr. College, Madison
Palm Beach Jr. College, Lake Worth
Pensacola Jr. College, Pensacola
Polk Jr. College, Winter Haven
Santa Fe Jr. College, Gainesville
Seminole Jr. College, Sanford
South Florida Jr. College, Avon Park
St. Johns River Jr. College, Palatka

St. Petersburg Jr. College, St. Petersburg
Tallahassee Jr. College, Tallahassee

GEORGIA

Abraham Baldwin Agriculture College, Tifton
Albany Jr. College, Albany
Brunswick Jr. College, Brunswick
Dalton Jr. College, Dalton
Dekalb College, Clarkston
Emmanuel College, Franklin Springs
Gainesville Jr. College, Gainesville
South Georgia College, Douglas

HAWAII

Honolulu Community College, Honolulu
Kapiolani Community College, Honolulu
Kauai Community College, Lihue
Leeward Community College, Pearl City

IDAHO

College of Southern Idaho, Twin Falls
North Idaho Jr. College, Coeur d'Alene
Ricks College, Rexburg

ILLINOIS

Belleville Jr. College, Belleville
Black Hawk College, Moline
Carl Sandburg College, Galesburg
Central YMCA Community College, Chicago
Chicago City College—Bogan Campus, Chicago
Chicago City College—Southeast Campus, Chicago
Chicago City College—Wright Campus, Chicago
College of Dupage, Naperville
College of Lake County, Grayslake
Danville Jr. College, Danville
Elgin Community College, Elgin
Highland Community College, Freeport
Illinois Central College, East Peoria
Illinois Valley Community College, Oglesby
John A. Logan College, Carterville
Kankakee Community College, Kankakee
Kaskaskia College, Centralia
Kishwaukee College, Malta
Lake Land College, Mattoon
Lincoln Land Community College, Springfield
Malcom X College, Chicago
McHenry County Jr. College, Crystal Lake
Moraine Valley Community College, Palos Hills
Morton College, Cicero
Olney Central College, Olney
Rend Lake College, Mt. Vernon
Robert Morris College of Carthage, Carthage
Rock Valley College, Rockford
Sauk Valley College, Dixon
Spoon River College, Canton
Thornton Jr. College, Harvey
Triton College, River Grove
Wabash Valley College, Mt. Carmel
Waubonsee Community College, Sugar Grove
William Rainey Harper College, Palatine
Winston Churchill College, Pontiac

INDIANA

Indiana University at Kokomo, Kokomo
Vincennes University, Vincennes

IOWA

Area XV Community College, Centerville
Des Moines (Area Eleven) Community College, Ankeny
Des Moines Community College, Boone
Eastern Iowa Community College, Clinton
Eastern Iowa Community College, Muscatine
Eastern Iowa Community College—Scott Campus, Davenport
Ellsworth College, Iowa Falls
Iowa Central Community College, Eagle Grove
Iowa Central Community College, Fort Dodge
Iowa Central Community College, Webster City
Iowa Lakes Community College, Estherville
Iowa Western Community College, Council Bluffs
Kirkwood Community College, Cedar Rapids
Marshalltown Community College, Marshalltown
North Iowa Area Community College, Mason City
Southeast Iowa Community College, Burlington

Southeast Iowa Community College, Keokuk
Southwestern Community College, Creston

KANSAS

Allen County Community Jr. College, Iola
Barton County Community Jr. College, Great Bend
Butler County Community Jr. College, El Dorado
Central College, McPherson
Cloud County Community Jr. College, Concordia
Coffeyville Community Jr. College, Coffeyville
Colby Community Jr. College, Colby
Cowley County Community Jr. College, Arkansas City
Dodge City Community Jr. College, Dodge City
Donnelly College, Kansas City
Fort Scott Community Jr. College, Fort Scott
Hesston College, Hesston
Hutchinson Community Jr. College, Hutchinson
Independence Community Jr. College, Independence
Kansas City Kansas Community Junior College, Kansas City
Labette Community Jr. College, Parsons
Neosho County Community Jr. College, Chanute
Pratt Community Jr. College, Pratt

KENTUCKY

Ashland Community College, Ashland
Elizabethtown Community College, Elizabethtown
Fort Knox Community College, Fort Knox
Hazard Community College, Hazard
Henderson Community College, Henderson
Hopkinsville Community College, Hopkinsville
Jefferson Community College, Louisville
Maysville Community College, Maysville
Northern Community College, Covington
Paducah Community College Paducah
Prestonsburg Community College, Prestonsburg
Somerset Community College, Somerset
Southeast Community College, Cumberland
University of Kentucky Community College, Lexington

LOUISIANA

Louisiana State University—Alexandria, Alexandria

MAINE

University of Maine—Augusta, Augusta

MARYLAND

Allegany Community College, Cumberland
Anne Arundel Community College, Arnold
Catonsville Community College, Catonsville
Cecil Community College, Elkton
Charles County Community College, La Plata
Chesapeake College, Wye Mills
Community College of Baltimore, Baltimore
Essex Community College, Baltimore County
Frederick Community College, Frederick
Hagerstown Jr. College, Hagerstown
Harford Jr. College, Bel Air
Kirkland Hall College, Easton
Montgomery Jr. College, Rockville
Montgomery Jr. College, Takama Park
Prince Georges Community College, Largo

MASSACHUSETTS

Bay Path Jr. College, Longmeadow
Becker Jr. College, Worcester
Berkshire Community College, Pittsfield
Bristol Community College, Fall River
Cape Cod Community College, Hyannis
Dean Jr. College, Franklin
Fisher Jr. College, Boston
Garland Jr. College, Boston
Greenfield Community College, Greenfield
Holyoke Community College, Holyoke
Lasell Jr. College, Auburndale
Leicester Jr. College, Leicester
Massachusetts Bay Community College, Watertown
Massasoit Community College, West Bridgewater
Newton Jr. College, Newtonville
Northern Essex Community College, Haverhill
Quinsigamond Community College, Worcester
Wentworth Institute, Boston
Worcester Jr. College, Worcester

MICHIGAN

Alpena Community College, Alpena
Davenport College of Business, Grand Rapids
Delta College, University Center

Flint Community Jr. College, Flint
Glen Oaks Community College, Centreville
Gogebic Community College, Ironwood
Grand Rapids Jr. College, Grand Rapids
Henry Ford Community College, Dearborn
Jackson Community College, Jackson
Kalamazoo Valley Community College, Kalamazoo
Kellogg Community College, Battle Creek
Lansing Community College, Lansing
Macomb County Community College, Warren
Monroe County Community College, Monroe
Montcalm Community College, Sidney
Muskegon County Community College, Muskegon
North Central Michigan College, Petoskey
Northwestern Michigan College, Traverse City
Schoolcraft College, Livonia
Southwestern Michigan Community College, Dowagiac
St. Clair County Community College, Port Huron
Washtenaw Community College, Ypsilanti
West Shore Community College, Scottville

MINNESOTA

Anoka-Ramsey State Jr. College, Coon Rapids
Austin State Jr. College, Austin
Bethany Lutheran College & Theological Seminary, Mankato
Brainerd State Jr. College, Brainerd
Fergus Falls State Jr. College, Fergus Falls
Golden Valley Lutheran College, Minneapolis
Itasca State Jr. College, Grand Rapids
Mesabi State Jr. College, Virginia
Metropolitan State Jr. College, Minneapolis
Normandale State Jr. College, Bloomington
North Hennepin State Jr. College, Minneapolis
Northland State Jr. College, Thief River Falls
Rainy River State Jr. College, International Falls
Rochester State Jr. College, Rochester
Worthington State Jr. College, Worthington

MISSISSIPPI

Copiah-Lincoln Jr. College, Wesson
East Central Jr. College, Decatur
Gulf Park Jr. College, Long Beach
Holmes Jr. College, Goodman
Itawamba Jr. College—Vocational & Technical Center, Tupelo
Jackson County Jr. College, Gautier
Jones County Jr. College, Ellisville
Meridian Jr. College, Meridian
Mississippi Delta Jr. College, Moorhead
Mississippi Gulf Coast Jr. College, Gulfport
Northeast Mississippi Jr. College, Booneville
Northwest Mississippi Jr. College, Senatobia
Pearl River Jr. College, Poplarville
Perkinston College—Main Campus, Perkinston
Saints Jr. College, Lexington
Southwest Mississippi Jr. College, Summit
Utica Jr. College, Utica

MISSOURI

The Junior College District, St. Louis
Metropolitan Jr. College, Kansas City
Three Rivers Jr. College, Poplar Bluff

MONTANA

Dawson College, Glendive
Flathead Valley Community College, Kalispell
Miles Community College, Miles City

NEBRASKA

Central Nebraska Tech., Hastings
Nebraska Western College, Scottsbluff
North Platte College, North Platte
Platte Jr. College, Columbus

NEW HAMPSHIRE

Colby Jr. College, New London

NEW JERSEY

Atlantic Community College, Mays Landing
Bergen Community College, Paramus
Burlington County College, Pemberton
Camden County College, Blackwood
Essex County College, Newark
Gloucester County College, Sewell
Mercer County Community College, Trenton
Middlesex County College, Edison
Monmouth College—Jr. College Division, West Long Branch

Ocean County College, Toms River
Somerset County College, Green Brook

NEW MEXICO

Eastern New Mexico University, Roswell
New Mexico Jr. College, Hobbs

NEW YORK

Adirondack Community College, Glens Falls
Auburn Community College, Auburn
Broome Technical Community College, Binghamton
Community College of Finger Lakes, Canandaigua
Concordia College, Bronxville
Corning Community College, Corning
CUNY Bronx Community College, Bronx
CUNY Manhattan Community College, New York
CUNY New York City Community College, Brooklyn
Dutchess Community College, Poughkeepsie
Erie Community College, Buffalo
Fulton-Montgomery Community College, Johnstown
Genesee Community College, Batavia
Herkimer County Community College, Ilion
Hilbert College, Hamburg
Hudson Valley Community College, Troy
Jamestown Community College, Jamestown
Jefferson Community College, Watertown
Maria College of Albany, Albany
Maria Regina College, Syracuse
Mohawk Valley Community College, Utica
Monroe Community College, Rochester
Nassau Community College, Garden City
Niagara County Community College, Niagara Falls
North Country Community College, Saranac Lake
Onondaga Community College, Syracuse
Orange County Community College, Middletown
Queensborough Community College, Queens
Rockland Community College, Suffern
Suffolk Community College, Selden
Sullivan County Community College, South Fallsburg
SUNY Agricultural & Technical, Alfred
SUNY Agricultural & Technical, Canton
SUNY Agricultural & Technical, Cobleskill
SUNY Agricultural & Technical, Delhi
SUNY Agricultural & Technical, Morrisville
Tompkins-Cortland Community College, Groton
Trocaire College, Buffalo
Westchester Community College, Valhalla

NORTH CAROLINA

Central Piedmont Community College, Charlotte
Chowan College, Murfreesboro
College of the Albemarle, Elizabeth City
Davidson County Community College, Lexington
Gardner-Webb College, Boiling Springs
Gaston College, Dallas
Kittrell College, Kittrell
Lees-McRae College, Banner Elk
Lenoir County Community College, Kinston
Mitchell College, Statesville
Mount Olive Jr. College, Mount Olive
Peace College, Raleigh
Rockingham Community College, Wentworth
Sandhills Community College, Southern Pines
Southeastern Community College, Whiteville
Surry Community College, Dobson
Wayne Community College, Goldsboro
Western Piedmont Community College, Morganton

NORTH DAKOTA

Bismarck Jr. College, Bismarck
Lake Region Jr. College, Devils Lake
North Dakota School of Forestry, Bottineau
North Dakota State School of Science, Wahpeton

OHIO

Cuyahoga Community College—Metropolitan, Cleveland
Lakeland Community College, Mentor
Lorain County Community College, Elyria
Sinclair Community College, Dayton

OKLAHOMA

Bacone College, Bacone
Eastern Oklahoma State College, Wilburton
Murray State College—Agric. & Applied Science, Tishomingo
Northeastern Oklahoma A & M College, Miami

Northern Oklahoma College, Tonkawa

OREGON

Central Oregon Community College, Bend
Clackamas Community College, Oregon City
Judson Baptist College, Portland
Lane Community College, Eugene
Linn-Benton Community College, Albany
Mt. Hood Community College, Gresham
Portland Community College, Portland
Southwestern Oregon Community College, Coos Bay
Treasure Valley Community College, Ontario
Umpqua Community College, Roseburg

PENNSYLVANIA

Bucks County Community College, Newtown
Butler County Community College, Butler
Community College of Allegheny County—Boyce, Monroeville
Community College of Beaver County, Freedom
Community College of Delaware County, Media
Community College of Philadelphia, Philadelphia
Harcum Jr. College, Bryn Mawr
Harrisburg Area Community College, Harrisburg
Lackawanna Jr. College, Scranton
Lehigh County Community College, Schnecksville
Luzerne County Community College, Wilkes-Barre
Manor Jr. College, Jenkintown
Montgomery County Community College, Conshohocken
Mount Aloysius Jr. College, Cresson
Northampton County Area Community College, Bethlehem
Peirce Jr. College, Philadelphia
Penn Hall Jr. College, Chambersburg
Penn State Univ.—Berks Center, Wyomissing
Penn State Univ.—Dubois Campus, Dubois
Penn State Univ.—Fayette Campus, Uniontown
Penn State Univ.—Hazleton Campus, Hazleton
Penn State Univ.—Mont Alto Campus, Mont Alto
Penn State Univ.—Schuylkill Campus, Schuylkill Haven
Penn State Univ.—Shenango Valley Campus, Sharon
Penn State Univ.—Wilkes-Barre Campus, Wilkes-Barre
Penn State Univ. Worthington Scranton Campus, Dunmore
Williamsport Area Community College, Williamsport

RHODE ISLAND

Rhode Island Jr. College, Providence
Roger Williams College, Bristol
Roger Williams College, Providence

SOUTH CAROLINA

Anderson College, Anderson
Palmer College—Main Campus, Charleston
Spartanburg Jr. College, Spartanburg
University of South Carolina, Conway
University of South Carolina—Florence, Florence
University of South Carolina—Spartanburg, Spartanburg
University of South Carolina—Union, Union

SOUTH DAKOTA

Freeman Jr. College, Freeman

TENNESSEE

Aquinas Jr. College, Nashville
Columbia State Community College, Columbia
Jackson State Community College, Jackson

TEXAS

Alvin Jr. College, Alvin
Amarillo College, Amarillo
Bee County College, Beeville
Blinn College, Brenham
Brazosport Jr. College, Freeport
Central Texas College, Killeen
Cisco Jr. College, Cisco
Clarendon College, Clarendon
College of the Mainland, Texas City
Cooke County Jr. College, Gainesville
Del Mar College, Corpus Christi
El Centro College, Dallas
Frank Phillips College, Borger
Galveston Community College Galveston
Grayson County Jr. College, Denison
Henderson County Jr. College, Athens
Hill Jr. College, Hillsboro
Howard County Jr. College, Big Spring
Kilgore College, Kilgore
Laredo Jr. College, Laredo

Lee College, Baytown
McLennan Community College, Waco
Navarro Jr. College, Corsicana
Odessa College, Odessa
Paris Jr. College, Paris
San Antonio College, San Antonio
San Jacinto College, Pasadena
Southwest Texas Jr. College, Uvalde
Tarrant County Jr. College, Fort Worth
Temple Jr. College, Temple
Texarkana College, Texarkana
Texas Southmost College, Brownsville
Weatherford College, Weatherford
Wharton County Jr. College, Wharton

UTAH

College of Eastern Utah, Price
Dixie College, St. George

VERMONT

Green Mountain College, Poultney
Vermont Technical College, Randolph Center

VIRGINIA

Bluefield College, Bluefield
Blue Ridge Community College, Weyers Cave
Central Virginia Community College, Lynchburg
Danville Community College, Danville
John Tyler Community College, Chester
Marymount College of Virginia, Arlington
Northern Virginia Community College, Annandale
Patrick Henry College, Martinsville
Southern Sem. Jr. College, Buena Vista
Southwest Virginia Community College, Richlands
Thomas Nelson Community College, Hampton
Tidewater Community College, Portsmouth
University of Virginia—Eastern Shore Branch, Wallops Island
Virginia Intermont College, Bristol
Virginia Western Community College, Roanoke
Wytheville Community College, Wytheville

WASHINGTON

Big Bend Community College, Moses Lake
Centralia College, Centralia
Clark College, Vancouver
Edmonds Community College, Lynnwood
Everett Community College, Everett
Fort Steilacoom Community College, Tacoma
Grays Harbor College, Aberdeen
Green River Community College, Auburn
Highline Community College, Midway
Lower Columbia College, Longview
Olympic College, Bremerton
Peninsula College, Port Angeles
Seattle Central Community College, Seattle
Shoreline Community College, Seattle
Skagit Valley College, Mount Vernon
Walla Walla Community College, Walla Walla
Wenatchee Valley College, Wenatchee
Yakima Valley College, Yakima

WEST VIRGINIA

Potomac State College of West Virginia University, Keyser
West Virginia Institute of Technology, Montgomery

WISCONSIN

Madison Vocational-Technical & Adult School, Madison
Milwaukee Technical College, Milwaukee

WYOMING

Casper College, Casper
Central Wyoming College, Riverton
Eastern Wyoming College, Torrington
Northwest Community College, Powell
Sheridan College, Sheridan
Western Wyoming Community College, Rock Springs

Appendix D
Vocational-Technical Schools

ALABAMA

Alabama School of Trades, Gadsden
Bessemer State Technical Institute, Bessemer
Calhoun County Vocational-Technical School, Jacksonville
Carver State Technical Trade School, Mobile
MacArthur State Technical Institute, Opp
Opelika State Vocational-Technical Institute, Opelika
Southwest State Technical Institute, Mobile

ARIZONA

DeVry Institute of Technology, Phoenix

ARKANSAS

Crowley's Ridge Vocational-Technical School, Forrest City

CALIFORNIA

Center for Early Education, Los Angeles
Cogswell Poly College, San Francisco
Don Bosco Technical Institute, Rosemead
West Valley Occupational Center, Woodland Hills

COLORADO

Boulder Valley Area Vocational-Technical Center, Boulder
Colorado College of Medical and Dental Assistants, Denver

CONNECTICUT

Henry Abbott Regional Vo.-Tech. School, Danbury
Horace C. Wilcox Regional Vo.-Tech. School, Meriden
Norwalk State Technical College, Norwalk
Thames Valley State Technical College, Norwich
Windham Regional Technical School, Willimantic

DELAWARE

Sussex County Vocational-Technical Center, Georgetown

FLORIDA

Lewis M. Lively Vocational-Technical School, Tallahassee
Massey Business College, Jacksonville
Mid-Florida Technical Institute, Orlando

GEORGIA

Albany Area Technical School—Monroe Division, Albany
Athens Area Technical School, Athens
Atlanta Area Technical School, Atlanta
Augusta Area Technical School, Augusta
Lanier Area Technical School, Oakwood
Macon Area Vocational-Technical School, Macon
Marietta-Cobb Area Vo.-Tech. School, Marietta
Moultrie Area Vocational-Technical School, Moultrie
Pickens County Area Vocational & Technical Schools, Jasper
South Georgia Vocational & Technical School, Americus
Swainsboro Area Vocational-Technical School, Swainsboro
Thomas Area Vocational & Technical School, Thomasville
Valdosta Area Vocational-Technical School, Valdosta
Walker Co. Area Vocational & Technical School, Rock Spring

HAWAII

Hawaii Technical School, Hilo
Honolulu Business College, Honolulu

IDAHO

Independent School District No. 1, Lewiston

ILLINOIS

Allied Institute of Technology, Chicago
Quincy Technical School, Quincy

INDIANA

Indiana Vocational-Technical College, Indianapolis
Indiana Vocational-Technical College, South Bend
North Lawrence Vocational School, Bedford
Southeastern Indiana Vocational School, Versailles

IOWA

Area I Vocational-Technical School, Calmar
Hawkeye Institute of Technology, Waterloo
Iowa Technical Area XV Community College, Ottumwa
Northwest Iowa Vocational School—Area IV, Sheldon

KANSAS

Flint Hills Area Vocational-Technical School, Emporia
Haskell Institute, Lawrence
Kansas City Area Vocational-Technical School, Kansas City
Kansas Technical Institute, Salina
Kaw Area Vocational-Technical School, Topeka
Liberal Area Vocational-Technical School, Liberal
Manhattan Area Vocational-Technical School, Manhattan
North Central Area Vocational-Technical School, Beloit
Northeast Kansas Area Vocational-Technical School, Atchison
Northwest Kansas Vocational-Technical School, Goodland
Salina Area Vocational-Technical School, Salina
Southeast Kansas Vocational-Technical School, Coffeyville
Southwest Kansas Vocational-Technical School, Dodge City
Wichita Area Vocational-Technical School, Wichita

KENTUCKY

Bowling Green Area Vocational School, Bowling Green
Central Kentucky Area Vocational School, Lexington
Hazard Area Vocational-Technical School, Hazard
Jefferson Area Vocational-Technical School, Jeffersontown
Lexington Technical Institute, Lexington
Louisville Technical Institute, Louisville
Madisonville Area Vocational School, Madisonville
Northern Kentucky Area Vocational School, Covington
Owensboro Vocational School, Owensboro

LOUISIANA

Baton Rouge Vocational-Technical School, Baton Rouge
Capitol Area Vocational School, Baton Rouge
Central Area Trade School, Natchitoches
Delta Area Vocational School, Monroe
North Central Area Vocational-Technical School, Farmerville
Ouachita Valley Technical Institute, West Monroe
Sabine Valley Vocational-Technical School, Many
Shreveport-Bossier Vo.-Tech., Shreveport
South Louisiana Trade School, Houma
Sowela Technical Institute, Lake Charles
T. H. Harris Vocational-Technical School, Opelousas

MAINE

Central Maine Vocational-Technical Institute, Auburn
Eastern Maine Vocational-Technical Institute, Bangor
Northern Maine Vocational-Technical Institute, Presque Isle
Southern Maine Vocational-Technical Institute, South Portland

MARYLAND

Carver Vocational-Technical High School, Baltimore

MASSACHUSETTS

Blue Hills Regional Technical School, Canton
Boston Vocational-Technical Institute, Dorchester
Fall River Area Vocational-Technical School, Fall River
Franklin Institute of Boston, Boston
Greater Lawrence Regional Vo.-Tech. Inst., Andover
Quincy Vocational-Technical School, Quincy
Worcester Industrial Technical Institute, Worcester

MINNESOTA

Alexandria Area Technical School, Alexandria
Anoka Area Vocational-Technical School, Anoka
Austin Area Vocational-Technical School, Austin
Bemidji Area Vocational Technical School, Bemidji
Brainerd Area Vocational-Technical Institute, Brainerd
Canby Vocational-Technical School, Canby
Detroit Lakes Vocational-Technical School, Detroit Lakes
Duluth Area Institute of Technology, Duluth
Eveleth Area Vocational-Technical School, Eveleth
Faribault Area Vo.-Tech., Faribault
Granite Falls Area Technical Institute, Granite Falls
Hibbing Area Technical Institute, Hibbing
Jackson Area Vocational-Technical Institute, Jackson
Mankato Area Vocational-Technical Institute, North Mankato
Minneapolis Vocational-Technical School, Minneapolis
Moorhead Area Technical Institute, Moorhead
Pipestone Area Vocational-Technical Institute, Pipestone
Rochester Area Vocational-Technical Institute, Rochester
St. Cloud Area Vocational-Technical School, St. Cloud
St. Paul Technical-Vocational Institute, St. Paul
Staples Area Vocational-Technical School, Staples
Thief River Falls Area Vo.-Tech. School, Thief River Falls

Willmar Area Vocational-Technical Institute, Willmar
Winona Area Technical School, Winona
University of Minnesota Technical College, Crookston

MISSISSIPPI

Biloxi Municipal Separate School District, Biloxi
Golden Triangle Vocational-Technical Center, Columbus

MISSOURI

Brookfield R—III Technical-Vocational School, Brookfield
Cape Girardeau Vocational Technical School, Cape Girardeau
Central Technical Institute, Kansas City
Franklin Technical School, Joplin
Kirksville Area Vocational-Technical School, Kirksville
Linn Technical College, Linn
Mexico Area Vocational-Technical School, Mexico
Monett Area Vocational-Technical School, Monett
Southeast Missouri Vocational-Technical School, Sikeston
Southwest Missouri Area Vocational-Technical School, Neosho
Tri-County Technical School, Eldon

MONTANA

Helena Vocational-Technical Center, Helena
Missoula Technical Center, Missoula

NEBRASKA

Central Nebraska Technical College, Hastings
Nebraska Vocational-Technical School, Milford
Western Nebraska Vocational-Technical School, Sidney

NEVADA

Nevada Technical Institute, Reno
Southern Nevada Vocational-Technical Center, Las Vegas

NEW HAMPSHIRE

New Hampshire Vocational Institute, Berlin
New Hampshire Vocational Institute, Claremont
New Hampshire Vocational Institute, Concord
New Hampshire Vocational Institute, Laconia

NEW JERSEY

Cape May County Vocational-Technical Center, Cape May
Essex County Vocational & Technical School, East Orange
Essex County Vocational & Technical School, Irvington
Essex County Vocational & Technical School, Newark
Salem County Technical Institute, Penns Grove
Somerset County Technical Institute, Raritan
Somerset County Vocational-Technical Schools, Somerville
Sussex County Vocational-Technical School, Sparta
Union County Technical Institute, Scotch Plains
Warren County Technical Institute, Washington

NEW MEXICO

North American Technical Institute, Albuquerque

NEW YORK

Academy of Aeronautics, Flushing
Board of Coop. Ed. Serv. Tech. Centers, Yorktown Heights
Lewis A. Wilson Technological Center, Dix Hills
RCA Institutes, Inc., New York
SUNY Ranger School of Forestry, Wanakena
Voorhees Technical Institute, New York

NORTH CAROLINA

Anson Technical Institute, Ansonville
Asheville-Buncombe Technical Institute, Asheville
Bladen Technical Institute, Elizabethtown
Caldwell Technical Institute, Lenoir
Cape Fear Technical Institute, Wilmington
Carteret Technical Institute, Morehead City
Catawba Valley Technical Institute, Hickory
Cleveland County Technical Institute, Shelby
Craven County Technical Institute, New Bern
Durham Technical Institute, Durham
Edgecombe County Technical Institute, Tarboro
Fayetteville Technical Institute, Fayetteville
Forsyth Technical Institute, Winston-Salem
Guilford Technical Institute, Jamestown
Haywood Technical Institute, Clyde
James Sprunt Institute, Kenansville
Montgomery Technical Institute, Troy
Nash Technical Institute, Rocky Mount
Pamlico Technical Institute, Alliance
Pitt Technical Institute, Greenville
Randolph Technical Institute, Asheboro
Richmond Technical Institute, Hamlet

Rowan Technical Institute, Salisbury
Sampson Technical Institute, Clinton
Technical Institute of Alamance, Burlington
Tri-County Technical Institute, Murphy
W. W. Holding Technical Institute, Raleigh
Wilson County Technical Institute, Wilson

NORTH DAKOTA

Hanson Mechanical Trade School, Fargo

OHIO

Canton Area Technical School, Canton
Clark County Technical Institute, Springfield
Columbus Technical Institute, Columbus
Four County Technical Institute, Archbold
Kent State University—Ashtabula Branch Campus, Ashtabula
Penta Technical Institute, Perrysburg
Vanguard Technical Institute, Fremont

OKLAHOMA

Kiamichi Area Vo.-Tech. School Dist. No. 7, Wilburton
Oklahoma School of Bus., Account., Law & Finance, Tulsa
Oklahoma State Tech. Institute, Okmulgee
Oklahoma State University—Tech. Institute, Oklahoma City

OREGON

Chemeketa Community College, Salem
Oregon Technical Institute, Klamath Falls

PENNSYLVANIA

Altoona Area Vocational-Technical School, Altoona
Bethlehem Area Vocational-Technical School, Bethlehem
Bok Area Vocational-Technical School, Philadelphia
Bucks County Technical School, Fairless Hills
Central Westmoreland Area Vo.-Tech. School, Youngwood
Connelley Vocational-Technical High School, Pittsburgh
Dobbins Area Vocational-Technical School, Philadelphia
Eastern Northampton Co. Vo.-Tech. School, Easton
Eastern Westmoreland Vocational-Technical School, Latrobe
Harrisburg Area Community College, Harrisburg
Lebanon County Area Vocational-Technical School, Lebanon
Mastbaum Area Vocational-Technical School, Philadelphia
North Montco Area Vocational-Technical School, Lansdale
Northumberland Co. Vocational-Technical School, Shamokin
Steel Valley Technical School, West Mifflin
Upper Bucks County Vocational-Technical School, Perkasie
West Side Area Vocational-Technical School, Kingston

RHODE ISLAND

Coventry Vocational-Technical Facility, Coventry

SOUTH CAROLINA

Berkeley-Charleston-Dorchester Tech. Ed. Ctr., N. Charleston
Chesterfield-Marlboro Technical Education Center, Cheraw
Florence-Darlington Technical Education Center, Florence
Greenville Technical Education Center, Greenville
Orangeburg-Calhoun Technical Education Center, Orangeburg
Piedmont Technical Education Center, Greenwood
Richland Technical Education Center, Columbia
Spartanburg County Technical Education Center, Spartanburg
Sumter Area Technical Education Center, Sumter
Tri-County Technical Education Center, Pendleton
York County Technical Education Center, Rock Hill

SOUTH DAKOTA

Lake Area Vocational-Technical School, Watertown

TENNESSEE

Athens State Area Vocational-Technical School, Athens
Bristol-Sullivan Technical School, Bristol
Chattanooga State Technical Institute, Chattanooga
Franklin County Technical School, Winchester
Hume Fogg Technical School, Nashville
Memphis Area Vocational-Technical School, Memphis
Morristown Area Vocational-Technical School, Morristown
Shelbyville Area Vocational-Technical School, Shelbyville
State Technical Institute at Memphis, Memphis
Tri-Cities State Area Vocational-Technical School, Blountville
Vocational-Technical Teacher Institute, Oak Ridge

TEXAS

Angelina College, Lufkin

UTAH

Utah Technical College at Provo, Provo

Utah Technical College at Salt Lake, Salt Lake City

VERMONT

St. Johnsbury Trade School, St. Johnsbury

VIRGINIA

Peninsula Vocational-Technical Education Center, Hampton

Richmond Technical Center, Richmond

WASHINGTON

Bellingham Technical School, Bellingham

Clover Park Vocational-Technical School, Tacoma

Olympia Vocational-Technical Institute, Olympia

Tacoma Vocational-Technical Institute, Tacoma

WEST VIRGINIA

James Ramsey Vocational-Technical Center, Martinsburg

Marion County Vocational-Technical Center, Fairmont

McKinley Vocational & Technical Center, Wheeling

Raleigh County Vocational-Technical Center, Beckley

WISCONSIN

Appleton Vocational, Technical, & Adult School, Appleton

Eau Claire Vocational, Technical, & Adult Education, Eau Claire

Fond du Lac Technical Institute—District 10, Fond du Lac

Fox Valley Technical Institute, Nennah

Fox Valley Technical, Oshkosh

Janesville Vocational, Technical, & Adult Education, Janesville

Kenosha Technical Institute, Kenosha

Lakeshore Technical Institute, Sheboygan

Lakeshore Vocational & Technical School, Manitowoc

North Central Technical Institute, Wausau

Racine Technical Institute, Racine

Rice Lake School of Vo.-Tech. & Adult Education, Rice Lake

Superior Technical Institute, Superior

Waukesha Vocational, Technical, & Adult School, Waukesha

West Allis Vocational, Technical, & Adult School, West Allis

Western Wisconsin Technical Institute, La Crosse

Wisconsin Rapids Vo., Tech., & Adult School, Wisconsin Rapids

Appendix E

Institutions Returning Usable Student Follow-Up Data

Alpena Community College
Alpena, Michigan

American River College
Sacramento, California

Arapahoe Jr. College
Littleton, Colorado

Arizona Western College
Yuma, Arizona

Borough of Manhattan Community College
New York, New York

Brandywine College
Wilmington, Delaware

Bucks County Technical School
Fairless Hills, Pennsylvania

Butler County Community Jr. College
El Dorado, Kansas

Canby Vocational-Technical School
Canby, Minnesota

Central Piedmont Community College
Charlotte, North Carolina

Cerritos Jr. College District, California
Norwalk, California

College of San Mateo
San Mateo, California

Copiah-Lincoln Jr. College
Wesson, Mississippi

Eastern New Mexico University, Roswell Campus
Roswell, New Mexico

Ellsworth Jr. College
Iowa Falls, Iowa

Florida Jr. College at Jacksonville
Jacksonville, Florida

Forsyth Technical Institute
Winston-Salem, North Carolina

Greenville Technical Education Center
Greenville, South Carolina

Harrisburg Area Community College
Harrisburg, Pennsylvania

Hazard Area Vocational-Technical School
Hazard, Kentucky

Holmes Jr. College
Goodman, Mississippi

Juneau-Douglas Community College
Juneau, Alaska

Lehigh County Community College
Allentown, Pennsylvania

Los Angeles City College
Los Angeles, California

Macomb County Community College
Warren, Michigan

Madison Area Technical College
Madison, Wisconsin

Massachusetts State-Aided Vocational Schools

Milwaukee Technical College
Milwaukee, Wisconsin

Minneapolis Vocational-Technical School
Minneapolis, Minnesota

New York City Community College
New York, New York

North Dakota State School of Science
Wahpeton, North Dakota

North Idaho Jr. College
Coeur d'Alene, Idaho

North Montco Area Vocational-Technical School
Lansdale, Pennsylvania

Northwest Iowa Vocational School
Sheldon, Iowa

Paducah Tilghman Area Vocational-Technical School
Paducah, Kentucky

St. Petersburg Jr. College
St. Petersburg, Florida

San Diego Unified, Community Colleges
San Diego, California

Southern Maine Vocational-Technical Institute
South Portland, Maine

Southwest State Technical Institute
Mobile, Alabama

Spoon River College
Canton, Illinois

State Board for Vocational Education
Denver, Colorado

Union County Technical Institute
Scotch Plains, New Jersey

University of Minnesota, Project Mini-Score
Minneapolis, Minnesota

Vermont Technical College
Randolph Center, Vermont

Wisconsin Area Board of Vo., Tech., & Adult Educ., District

ACT Research Reports

This report is the thirty-seventh in a series published by the Research and Development Division of The American College Testing Program. The first 26 research reports have been deposited with the American Documentation Institute, ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington, D. C. 20540. Photocopies and 35 mm. microfilms are available at cost from ADI; order by ADI Document number. Advance payment is required. Make checks or money orders payable to: Chief, Photoduplication Service, Library of Congress. Beginning with Research Report No. 27, the reports have been deposited with the National Auxiliary Publications Service of the American Society for Information Science (NAPS), c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, New York 10001. Photocopies and 35 mm. microfilms are available at cost from NAPS. Order by NAPS Document number. Advance payment is required. Printed copies may be obtained, if available, from the Research and Development Division, The American College Testing Program. The reports are indexed by the *Current Contents, Education* Institute for Scientific Information, 325 Chestnut Street, Philadelphia, Pennsylvania 19106.

The reports since January 1969 in this series are listed below. A listing of previous reports is included in each of several items published by The American College Testing Program: *Your College Freshmen* (pp. 158-160), *Your College-Bound Students* (pp. 107-109). A complete list of the reports can be obtained by writing to the Research and Development Division, The American College Testing Program, P. O. Box 168, Iowa City, Iowa 52240.

No. 28 *A Description of Graduates of Two-Year Colleges,* by L. L. Baird, J. M. Richards, Jr. & L. R. Shevel (NAPS No. 11306; photo, $3.00; microfilm $1.00)

No. 29 *An Empirical Occupational Classification Derived from a Theory of Personality and Intended for Practice and Research,* by J. L. Holland, D. R. Whitney, N. S. Cole & J. M. Richards, Jr. (NAPS No. 00505; photo, $3.00; microfilm, $1.00)

No. 30 *Differential Validity in the ACT Tests,* by N. S. Cole (NAPS No. 00722; photo, $3.00; microfilm, $1.00)

No. 31 *Who Is Talented? An Analysis of Achievement,* by C. F. Elton & L. R. Shevel (NAPS No. 00723; photo, $3.00; microfilm, $1.00)

No. 32 *Patterns of Educational Aspiration,* by L. L. Baird (NAPS No. 00920; photo, $3.00; microfilm, $1.00)

No. 33 *Can Financial Need Analysis Be Simplified?* by M. D. Orwig & P. K. Jones (NAPS No. not available at this time.)

No. 34 *Research Strategies in Studying College Impact,* by K. A. Feldman (NAPS No. not available at this time.)

No. 35 *An Analysis of Spatial Configuration and Its Application to Research in Higher Education,* by N. S. Cole & J. W. L. Cole (NAPS No. not available at this time.)

No. 36 *Influence of Financial Need on the Vocational Development of College Students,* by A. R. Vander Well (NAPS No. not available at this time.)