

CHARACTERISTICS OF STUDENTS ENROLLED IN FLORIDA POST HIGH SCHOOL OCCUPATIONAL EDUCATION PROGRAMS

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SUMMARY

In order to study the characteristics of Florida's Area Vocational Center (AVC) students, the Career Planning Profile (CPP) was administered to 1625 students at centers early in the fall term, 1970. A follow-up questionnaire was administered late in the spring term, 1971.

Analysis of responses showed the mean scores attained by Florida AVC students to be lower than the national sample on the ability test of the CPP, and on female self-reported high school grade point averages; AVC students and the national sample were similar in self-estimate of skills and ability scores by educational program, AVC students exceeded national norms for non-academic competency and male self-reported high school grade point average.

INTRODUCTION

The recent growth in sophistication of American technology and the knowledge explosion which accompanied it have generated a need for a new spectrum of occupations in our society. These occupations in both industry and in the service professions require education at the semi-professional and technician level. This type of education is being offered at the post high school level, in part, by community colleges and also by area vocational centers.

The recent growth in numbers of students in occupational education programs has resulted in a void in information needed as basis for management decisions as well as for guidance purposes. The Florida Community Junior College Inter-institutional Research Council (IRC) in cooperation with Florida Division of Vocational-Technical and Adult Education conducted a series of studies to obtain this type information.

METHOD

Eleven area vocational centers (AVC) in Florida were identified that offered programs in post-high school occupational education.

Characteristics of students in these area vocational centers were studied by use of the Career Planning Profile (CPP). This instrument was developed by the American College Testing Service (A. C. T.) for special use with students in occupational programs.

A. C. T. conducted the administration of the CPP to 1,625 students shortly after the fall term, 1970, had begun. Subsequently, near the end of the spring term, 1971, A. C. T. administered a follow-up questionnaire to the same students.

A. C. T. performed the analysis for both questionnaires and provided participating institutions with individual reports of each of their students as well as a summary analysis for their institution. This report is for pooled data of all participating institutions (see Table 1).

TABLE 1
Participating Institutions

Institution	Location
Brewster Adult Technical School	Tampa
Lewis M. Lively Area Vocational- Technical Center	Tallahassee
Lindsey Hopkins Education Center	Miami
Manatee Area Vocational and Technical Center	Bradenton
Mid-Florida Technical Institute	Orlando
North Technical Education Center	Riviera Beach
Pinellas Vocational-Technical Institute	Clearwater
Sarasota County Vocational-Technical Center	Sarasota

RESULTS AND DISCUSSION

Abilities and interest. Table 2 presents ability test score means on the CPP ability test for Florida AVC students and a national sample of students enrolled in occupational education programs. When these data are compared it can be observed that mean scores attained by both Florida AVC men and women students were lower than the mean scores attained by men and women of the national sample. Although any interpretation of this result would only be speculative, a possible explanation is that Florida has been much more successful in extending post high school education to the masses of students through community colleges and AVC's than other states included in ACT's national sample. Thus, a wider student diversity was reflected in the Florida sample than in the national sample. In any event, the range of correlations between grades students attained in the occupational programs and their ability measure was from .22 to .34. Obviously these correlations are too low to attach much significance to the ability measures as predictors of performance in the programs or use in student selection.

TABLE 2
Ability Test Score Means for Florida AVC Students and
National Sample

CPP Ability Test	AVC			National Sample		
	Men	Women	Total	Men	Women	Total
Mechanical Skills	52.4	40.2	47.6	53.7	44.3	50.1
Nonverbal Reasoning	47.3	45.0	46.4	49.9	50.1	50.0
Clerical Skills	47.2	46.0	46.7	49.4	51.4	50.1
Numerical Computations	47.3	44.2	46.1	49.9	50.4	50.1
Mathematical Reasoning	48.3	42.0	45.8	51.3	47.7	49.9
Space Relations	50.0	42.8	47.2	51.8	47.0	50.0
Reading Skills	46.8	45.3	46.2	49.9	50.5	50.2

CPP Nonacademic Competency Score Means for Florida AVC Students and National Sample

CPP Nonacademic Competencies	AVC Students			National Sample		
	Men	Women	Total	Men	Women	Total
Skilled Trades	12.2	2.3	8.6	11.1	2.2	7.9
Home Economics	4.5	9.2	6.4	3.8	8.8	5.7
Scientific	4.4	3.4	4.0	4.1	3.3	3.8
Sports	5.2	3.2	4.4	5.4	3.1	4.5
Artistic	3.5	5.7	4.4	3.2	5.4	4.1
Community Service	1.5	3.0	2.1	1.5	2.7	1.9
Business	5.1	3.9	4.6	4.9	3.7	4.4
Leadership	3.4	4.1	3.7	3.2	4.0	3.5
Clerical	3.8	5.0	4.3	3.6	5.3	4.3

TABLE 4
 Percents of AVC Students and National Sample Ranking Themselves in Above Average and Top 10 Percent Categories on CPP Self-Estimate of Skills Inventory

CPP Self-Estimate of Skill	Men				Women			
	Above Average		Top 10%		Above Average		Top 10%	
	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l
Academic Motivation	29	29	7	6	33	37	11	9
Adaptability	34	35	9	6	30	34	9	6
Artistic Ability	19	18	5	4	19	19	4	3
Clerical Ability	15	16	4	3	23	26	5	5
Common Sense	45	44	13	11	32	37	10	8
Coping Ability	30	29	7	5	26	25	5	3
English Ability	13	14	4	2	22	24	4	5
Getting Along	38	43	17	12	42	46	14	12
Learning Ability	27	25	5	4	20	24	6	4
Liking School	24	26	8	5	35	33	14	9
Mathematical Ability	23	21	5	4	12	11	2	2
Mechanical Ability	44	44	15	3	10	9	2	1
Physical Energy	36	40	13	13	30	29	9	6
Scientific Ability	15	12	3	2	8	8	2	1
Social Self-Confidence	20	20	6	4	25	24	6	6
Work Motivation	46	49	14	12	52	51	19	14

Table 3 presents the CPP nonacademic competency score means for area vocational students and the national sample. From this table it can be seen that Florida AVC women obtained higher mean scores in eight of the nine test areas than the national sample. Also, mean scores of the Florida AVC men exceeded the national sample mean scores in seven of these test areas.

It is also interesting to note that there were considerable differences in the scores attained by men and women on some of these scales. Possible explanations for these pronounced differences might be divergent work experience of males and females and their having pursued different curriculums in high school. In either case, the variance in these mean test scores indicates the possibility exists for increasing these nonacademic competencies.

The results of the CPP self-estimate of skills inventory are presented in Table 4. Although few differences can be observed between the means of AVC students and the national sample, considerable differences are apparent between means of males and females in some of the skills. These differences are particularly pronounced in English ability and mathematical ability. Again, these differences could be due to dissimilar high school curricula for men and women.

Table 5 indicates the mean self-reported high school grade point average of AVC students and the national sample by subject area. The self-reported high school grade point averages of men students had a higher mean than the national sample in mathematics, natural science, and vocational subjects. However, AVC women's reported grade point average mean was lower than the national sample's mean in each subject area except mathematics where the means were the same.

TABLE 5

Means of Self-Reported High School Grade Point Averages in Subject Areas for Florida AVC Students and National Sample

Academic Field	AVC Students			National Norms		
	Men	Women	Total	Men	Women	Total
English	2.12	2.63	2.32	2.17	2.80	2.41
Mathematics	2.33	2.35	2.34	2.14	2.35	2.22
Social Science	2.30	2.57	2.41	2.37	2.73	2.51
Natural Science	2.30	2.42	2.35	2.25	2.51	2.35
Business	2.48	2.70	2.60	2.51	2.96	2.72
Vocational	3.04	3.02	3.03	3.03	3.20	3.09

TABLE 6

Florida AVC and National Student Averages for Ability Scales by Educational Program

Educational Program	Mech. Skills		Nonverbal Reas.		Clerical Skills		Numerical Comp.		Math Reas.		Space Rel.		Reading Skills	
	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l	AVC	Nat'l
Agriculture, Forestry, Maritime Fields	53.8	52.8	45.0	49.2	48.1	48.5	43.9	48.5	47.0	50.1	48.8	51.1	47.7	49.7
Persuasion and Marketing Fields	41.9	49.0	41.1	49.0	45.9	50.0	46.4	49.4	45.3	49.8	45.9	48.9	47.4	50.0
Health Fields	42.1	45.9	45.5	50.0	47.3	51.1	44.7	50.0	42.9	48.7	43.6	47.6	47.7	51.7
Home Economics	32.3	46.1	41.3	50.4	40.3	52.4	41.0	49.2	39.3	47.7	40.7	49.2	40.0	49.7
Business and Office Fields	38.7	47.2	43.8	50.5	45.0	52.5	44.2	52.7	42.0	50.2	41.3	49.0	42.8	50.8
Science, Engineering, and Technology	58.5	57.5	52.8	53.1	51.6	51.4	53.0	53.7	56.4	56.0	55.9	54.2	52.3	53.3
Trade and Industrial Fields	52.2	53.4	47.3	49.1	46.9	48.7	46.9	48.6	47.8	49.5	49.5	51.7	46.3	48.3
Social Science and Public Service	43.8	48.8	47.4	50.8	44.3	50.8	43.6	49.0	41.6	49.4	46.0	49.9	45.4	51.3
Arts and Humanities	53.0	51.1	50.6	51.4	50.7	48.5	51.4	49.2	51.1	50.2	54.8	50.4	48.2	50.0
Undecided	47.5	49.6	50.7	50.4	43.7	47.8	44.5	49.0	45.7	49.1	50.5	49.0	48.0	49.2
All Students	47.6	50.1	46.4	50.0	46.7	50.1	46.1	50.1	45.8	49.9	47.1	50.0	46.1	50.1

TABLE 7

Most Important Goals of Florida AVC Students in Attending School, by Percentage

Most Important Goal	Men	Women
To Develop My Mind	9	5
To Secure Vocational or Professional Training	54	58
To Earn a Higher Income	10	7
To Develop Skills for Finding a Job	18	23
To Learn to Enjoy Life	1	1
To Develop a Philosophy of Life	1	1
Reason Other Than Listed Above	7	7

Ability score means by educational program are presented in Table 6. Minor differences can be observed in the means of Florida AVC student scores and the national sample scores. These differences also exist between educational programs with science, engineering, and technology students consistently having the highest means.

Students' motives. AVC students' interest in occupational education was primarily to gain employment. The students reported that their most important educational goal (men-72%, women-81%) was to secure the training or to develop the skills needed for employment (Table 7). Only 10% of the men and 7% of the women indicated that attaining a higher income was an important goal.

This certainly supports the contention that occupational programs must lead to employment for students who complete the program. The reason for the high attrition in some programs might be due to a concern of students that they may not be able to obtain employment on completion of the program.

Satisfaction of students. Students were generally satisfied with their instructors. The majority of both men and women reported that most of their instructors in all nine vocational fields showed interest in students and were competent in their subject matter field. Students also felt that their instructors were knowledgeable about the world of work.

Stability of vocational plans. A comparison was made of the vocational program indicated on the career planning profile which was administered in the fall and the vocational program indicated on the follow-up questionnaire which was administered in the spring. Table 8 shows this comparison for men and women. The numbers on the table's diagonal show the percent of students who were retained in each program and the vertical off-diagonal numbers show the percents of students who changed to the programs described at the top of the table and their original program choice indicated on the left side of the table.

The percents of students who retain their original program choices vary from 86 for trade and industrial fields to 0 for home economics. However, it should be noted that the number of students in home economics, as well as in some other programs, was small. Also some new choices may be related programs. Even so, the surprisingly low percents of students who retained their choices in some fields cannot plausibly be accounted for except by attrition from initial program choices.

TABLE 8
Stability of Vocational Choice of AVC Students
(by Percentages)

Vocation Reported Fall term 1970	Sex	Num- ber	Vocation Reported Spring Term 1971									
			Agric- ulture Forestry Maritime	Pers. & Market- ing Fields	Health Fields	Home Eco- nomics	Busi- ness Office Fields	Science Engineer- ing Tech- nology	Trade & In- dustrial Fields	Social Science & Public Service	Arts and HUMANI- ties	Unde- cided
	M	789	6	2	2		3	11	66	2	7	2
	W	481	1	1	44		25	1	4	17	2	5
All	Total	1270	4	2	18		11	7	42	8	5	3
Agriculture, Forestry, and Maritime Flds.	M	32	78						22			50
	W	2	50									7
	Total	34	76						21			3
Persuasion and Market- ing Fields	M	30	7	23				3	53	7		7
	W	14	5	36	14		14		7	7		21
	Total	44	5	27	5		5	2	39	7		11
Health Fields	M	9	11		78							4
	W	206			93		1					4
	Total	215	1		92		1					4
Home Economics	M	1						100				
	W	3					67					33
	Total	4					50	25				25
Business and Office Fields	M	20					70	5	15			10
	W	107		1	2		87		1	4	2	4
	Total	127		1	2		84	1	3	3	2	5
Science, Engin- eering, and Technology	M	112	1				2	45	40	3	8	2
	W	4					25	50			25	
	Total	116	1				3	45	39	3	9	2
Trade and Industrial Fields	M	453	2	1	1		1	6	86	1	2	1
	W	14					7	7	86			
	Total	467	1	1	1		1	6	86	1	2	1
Social Science and Public Service	M	12	8	8					17	50	17	
	W	57			4		2		89		2	4
	Total	69	1	1	3		1		3	83	4	3
Arts and Humanities	M	45						7	27	4	62	
	W	12			8		8	8			42	33
	Total	69			2		2	7	21	4	58	7
Undecided	M	5	20									
	W	6		17	33		17		60		20	33
	Total	11	9	9	18		9		27		9	18

No attempt was made to determine the cost of inappropriate vocational training due to individual student changes in vocational aspirations. Rather, each program director should determine the cost of such student changes for his institution. Such an analysis may result in a greater support of early career education in the public school, competent career counseling, and other methods of lowering the number of students changing objectives in these programs.

Value of faculty advising. Students in many of the program areas reported that faculty advisement was not offered, never used, or of little benefit. This dissatisfaction with faculty advisement was also manifested in many students reporting uncertainty in their plans after their current school year ended. As indicated by Table 9, too few students had made decisions relative to work, continuing their education, or leaving school. Since their prime reason for enrolling in occupational education programs in the first place was to obtain employment (87%), and since after approximately a year in their programs many students were uncertain about their work plans, one must recognize the seriousness of this failure to provide students with the adequate advisement for decision making. These data should challenge all faculty to find ways of making their advisement more effective.

TABLE 9
AVC Students' Plans After Current School Year
(By Percent)

Program	Sex	N	Work	Transfer to a New School	Return to Finish or Part-Time	Leave	Indefinite
All Students	M	934	9	5	59	1	26
	W	609	17	6	35	2	40
	Total	1543	13	6	49	1	31
Agriculture, Forestry and Maritime Fields	M	31	16		61		23
	W	1			100		22
Persuasion and Marketing Fields	Total	32	16		63		
	M	10		30			70
	W	9	22			11	67
Health Fields	Total	19	11	16		5	68
	M	13	8	8	31		54
	W	275	19	6	24		52
Home Economics	Total	288	18	6	24		52
	M	3	33		67		
	W	3	33		67		
Business and Office Fields	M	25	4	4	72		20
	W	156	16	8	40	6	31
	Total	181	14	7	44	5	29
Science, Engineering, and Technology	M	46	9	7	65		20
	W	1					100
Trade and Industrial Fields	Total	47	9	6	64		21
	M	670	10	4	59	2	25
	W	21	5	14	57		24
Social Science and Public Service	Total	691	10	5	59	2	25
	M	16	19	25	31		25
	W	81	17	4	47		32
Arts and Humanities	Total	97	18	7	44		31
	M	34	12	9	50		29
	W	7			100		
Undecided	Total	41	10	7	59		24
	M	3			100		
	W	1					100
Undecided	Total	4			75		25

Family background. Students were asked to respond to the question "How many people other than yourself are in your family?" The following responses were provided: 0, 1 to 2 people, 3 to 5 people, 6 to 8 people, and more than 8 people. The responses, in percentages, for each of these categories, respectively, were 5, 26, 50, 16, and 5. An analysis by male and female responses indicated that the maximum difference in each response was only three.

The analysis of these responses by program gave very similar results with the exception of those programs that had relatively few students enrolled.

Only 23% of the students reported that their father had education beyond the high school level and 18% reported that their mother had education beyond the high school level. Twenty-one percent reported that their father was a high school graduate and 32% reported that their mother was a high school graduate. Nineteen percent and 15%, respectively, reported that their father and mother had attained the eighth grade or lower educational level.

The above results would imply that post-high school occupational education was providing socioeconomic mobility for the vast majority of respondents.

TABLE 10
Methods Used by Florida AVC Students to Meet School Expenses
by Percentage

Individual Methods	Major Source		Minor Source		Not a Source	
	Men	Women	Men	Women	Men	Women
Parents Pay Expenses	35	42	23	14	42	44
Work to Pay Expenses	43	30	32	21	26	49
Received State Funds Through the School	5	6	2	2	93	92
Received Federal Funds Through the School	27	7	7	2	66	91
Received School Funds	2	4	3	3	95	93
Using Personal Savings	18	20	21	18	62	62
Borrowed Money from Banks or Other Commercial Institutions	2	1	4	3	94	97
Borrowed Money from Other Sources	10	23	13	14	77	63

These AVC students tended to be from large families characterized by low parental educational attainment, but even so, the family and personal resources financed AVC education for most students. While the motivation of the students was found to revolve around the realistic goal of gaining employment, after a year in the program many students had not made definitive career plans. This may be related to the finding that while students were satisfied with the faculty in other areas, they found advisement and counseling to be lacking.

While the purpose of this study was descriptive, by identifying the characteristics and needs of students, and the strengths and weaknesses of the AVC programs, these findings should serve to guide and modify present programs of post-high school training as well as curricula within the high schools themselves.

Financial support. Table 10 indicates that family and personal resources (work and savings) together are the principal means of financing school for Florida AVC students, both men and women. Although 27% of the men indicated federal funds received through the school as a major source of funds for these expenses, relatively few obtained appreciable amounts of support from state or school funding or from borrowing. While approximately equal numbers of men and women students indicated no reliance on parents, somewhat more women than men listed them as a major source of finance for school purposes. More men than women worked to pay their expenses although about equal numbers used personal savings. Considerably more women than men received funds "from other sources."

SUMMARY AND CONCLUSIONS

Recent expansion of technology and knowledge has stimulated the growth of semi-professional and technical education at the post-high school level. This growth has been accompanied by an increasing need for information about the students enrolling in such programs. The purpose of this study is to provide some of this needed data.

In this Florida study of student characteristics, 1625 students from eleven Area Vocational Centers (AVC) offering post-high school education were administered the Career Planning Profile (CPP) early in the fall term, 1970. Late in the spring term, 1971, participants were administered a follow-up questionnaire.

An ACT analysis of the responses yielded the following results on the several sections of the CPP: mean scores of the AVC students were below national norms on the ability test; AVC female students obtained higher mean scores on eight of nine test areas of nonacademic competency than did the national sample, and males exceeded the national group in seven areas; AVC students and the national sample showed few differences on the self-estimate of skills; Male AVC students exceeded the national marks for self-reported high school grade point average in natural science, mathematics and vocational training, but females were lower than the national group in every subject area except mathematics; ability scores by educational programs were similar to those of the national sample; there tended to be considerable differences between the AVC male and female scores on several sections of the CPP.

These AVC students tended to be from large families characterized by low parental educational attainment, but even so, the family and personal resources financed AVC education for most students. While the motivation of the students was found to revolve around the realistic goal of gaining employment, after a year in the program many students had not made definitive career plans. This may be related to the finding that while students were satisfied with the faculty in other areas, they found advisement and counseling to be lacking.

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