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AUTHOR Sanders, Lester F.  
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## ABSTRACT

To analyze and compare the cooperative occupational education and vocational-technical school programs and graduates in the Springfield, Missouri, public schools, information forms were sent to: (1) 268 graduates of the cooperative occupational education programs and 417 graduates of the vocational-technical school for the years 1961-1965, (2) their parents, and (3) present and past employers. Some conclusions were: (1) Vocational-technical programs seemed to have greater impact in maintaining student interest and improving attitudes towards school, (2) Cooperative education graduates emphasized the development of desirable personal-social characteristics and vocational-technical graduates emphasized job skills and related knowledge, (3) Transition from school to full-time employment is made more quickly and easily through cooperative education programs, (4) A majority of vocational-technical graduates took advantage of unsupervised work experience programs while in high school, (5) After a period of adjustment, the vocational-technical graduates tended to return to the occupation for which they were trained in greater numbers, and (6) Cooperative education graduates tended to demonstrate more desirable personality traits, work habits, and a higher degree of occupational competency. (DM)

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**By  
Lester E. Sanders**

**UNIVERSITY OF MISSOURI - COLUMBIA**

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***A Comparison of Two Methods of Preparing Youth  
For Employment: Cooperative Occupational Education  
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**By  
Lester E. Sanders**

A summary report of a dissertation study by the same title submitted by the writer in partial fulfillment of the requirements for the degree of Doctor of Education in the Graduate School at the University of Missouri, 1967.

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## PREFACE

Since the passage of the Smith-Hughes Act of 1917 the public schools in all the States have established programs of vocational education and today, as never before, vocational education is almost a universally accepted national, if not individual, necessity. Several types of programs have been developed in the area of trades and industries, including the day trade preparatory class or school in which youth are taught both the skills and necessary related knowledge of the occupation in the classroom and laboratory prior to employment, and in the part-time cooperative program in which the job skills and procedures of the occupation are learned through part-time work for wages on the job under the direction of the employer, and the coordinated related instruction is provided through the school.

These programs are quite different, each having certain inherent advantages and certain limitations. Originally, the trade preparatory program was found almost exclusively in the larger community, the part-time cooperative program in the small school or community. Today, however, many large cities have adopted cooperative programs, and day trade preparatory classes are found in numerous small schools as well as in area vocational-technical schools.

In spite of these developments, too little is actually known as to the relative merits of the two approaches to the preparation of youth for employment. At this time, when federal and state funds for vocational education are being greatly increased, signaling still further developments, factual information about the relative merits of these programs is needed.

Reported here in summary form are the findings and conclusions of a comparative study of part-time cooperative occupational education versus the day trade preparatory program in a city having long-established programs of both types. It is believed that the findings will be of interest to state and local boards of vocational education, school administrators, teacher educators, local directors, coordinators, and others interested in the operation of quality programs of vocational education.

H. H. LONDON  
Professor of  
Industrial Education

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### Purpose of the Study

The purpose of this study was to analyze and compare the Cooperative Occupational Education and Vocational-Technical School programs and graduates in the Springfield, Missouri, public schools.

More specifically, the study sought answers to the following questions:

1. How many high school students had graduated from each of the two programs, and how were they distributed with respect to sex, race, intelligence, scholastic rank and grade point average?
2. What was the nature and extent of the high school education and training of the two groups of graduates? What opinions are held by the two groups toward their education and training as it relates to their present jobs? In what extra-curricular activities did the graduates participate, and how extensive was this participation? To what extent did participation in vocational education limit their choices of other curricular activities?
3. How much and what kind of education and training beyond high school had each group of graduates obtained? What was the relationship, if any, of the post-high school education and training of the graduates to the training received in high school? What has been the cost to the school in operating the two vocational education programs?
4. How do the two groups compare with respect to occupational background, and the nature and amount of work experience received prior to their participation in vocational-technical education in high school? What was the nature and extent of the work experiences of the two groups of graduates while receiving occupational training in high school?
5. What jobs were held by the graduates, including their current jobs, and how are the jobs related to the training obtained in high school? To what extent were the graduates satisfied with the jobs they held? What was the nature and extent of unemployment of the two groups of graduates, and what reasons were given for changing jobs?
6. What opinions are held by the parents of the graduates toward the programs of vocational education and the effect they had on their son or daughter? What opinions are held by the participating employers toward the two programs? How do the current employers rate the two groups of graduates with respect to personal characteristics, work habits, and overall competence as young workers?

### Definition of Terms

*Cooperative Occupational Education program* refers to a program for persons who are enrolled in school and who, through a cooperative arrangement between the school and employers, receive part-time vocational instruction in the school and on-the-job training through part-time employment.

*Cooperative Occupational Education graduate* refers to graduates of the four high schools in Springfield, Missouri, who had completed at least one year of trade and industrial training in the Cooperative Occupational Education programs.

*Vocational-Technical School graduates*, as used in this study, refers to graduates who had completed pre-employment trade and industrial and technical courses in the Vocational-Technical School in Springfield, Missouri.

*Vocational-Technical School participating employer*, as used in this study, refers to a business or institution which provided employment for graduates of the Vocational-Technical School immediately after graduation from high school.

*Cooperative Occupational Education participating employer* refers to a business or institution which provided training stations for Cooperative Occupational Education graduates while they were in high school and afterward.

*Current employers* refers to the businesses or institutions reported by the graduates as their places of employment at the time of the study.

### **Sources of Data And Method of Study**

Data for the study were obtained in part from the Vocational Division of the Missouri State Department of Education and from records found in the high schools and the Vocational-Technical School in Springfield, Missouri. Additional data were obtained from personal interviews and conferences with coordinators of Cooperative Occupational Education programs and Vocational-Technical School staff.

Finally, information forms were sent to: (1) 286 graduates of the Cooperative Occupational Education programs and 417 graduates of the Vocational-Technical School for the years 1961-1965, (2) parents of both groups of graduates, (3) employers who provided training stations for the Cooperative Occupational Education programs, (4) employers who provided initial employment for Vocational-Technical School graduates, and (5) current employers of the two groups of graduates.

### **Students Who Were Attracted to Cooperative Occupational Education and Vocational-Technical School Courses**

The graduates of Cooperative Occupational Education programs were approximately evenly distributed with respect to sex, whereas the Vocational-Technical School was serving predominantly male students.

Negro students were not attracted to either of the vocational programs in large numbers. Two per cent of both groups were Negro.

### **Intelligence and Achievement of Cooperative Occupational Education and Vocational-Technical School Graduates**

As indicated in Table I, there was no significant difference between the two groups of graduates with respect to intelligence as measured by the California Short Form Test of Mental Maturity.

TABLE I  
COMPARISON OF THE INTELLIGENCE QUOTIENTS  
OF THE TWO GROUPS

Intelligence Quotients	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
130-139	2	1	4	1
120-129	16	7	31	9
110-119	53	24	69	20
100-109	64	30	115	33
90-99	66	30	84	23
80-89	12	6	44	12
70-79	4	2	5	1
60-69	0	0	2	1
Total	217	100	354	100
Mean	101.31		103.53	
Standard Deviation	11.45		12.56 C. R.	.057

For the purpose of comparison, the class ranks of the two groups of graduates were divided into three categories: the upper, middle, and lower thirds. As shown in Table II, there was no significant difference between the two groups in educational achievement. A larger per cent of both groups were found to rank in the lower one-third of the graduating class.

TABLE II  
COMPARISON OF THE TWO GROUPS WITH RESPECT TO CLASS RANK

Class Rank	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Upper-third	56	20	53	13
Middle-third	104	36	150	36
Lower-third	124	44	209	51
Total	284	100	412	100
C. R. in the upper third	.99			
C. R. in the lower third	1.40			



### Occupations For Which Cooperative Occupational Education Graduates Obtained Training

Approximately one-fourth of the Vocational-Technical School graduates received two years of training, while less than one per cent of the Cooperative Occupational Education graduates participated in the program for two years.

As reported in Table III, the Cooperative Occupational Education program provided training in 41 different occupations, approximately 75 per cent of which were in four occupational fields: food trades, health occupations, construction trades, and automotive mechanics. The Vocational-Technical School provided training in nine occupational fields.

TABLE III  
OCCUPATIONS FOR WHICH COOPERATIVE OCCUPATIONAL EDUCATION GRADUATES OBTAINED TRAINING

Occupation	Number	Per Cent
<b>Food Trades:</b>	100	35
Commercial cook (88)		
Institutional food service (8)		
Commercial baking (4)		
<b>Health Occupations:</b>	80	28
Hospital aid (50)		
Dental Assistant (15)		
Medical record technology (9)		
Medical technology (5)		
Laboratory technology (1)		
<b>Mechanics Trades:</b>	31	11
Automotive mechanics (28)		
Automotive body-fender repair (2)		
Airplane mechanics (1)		
<b>Construction Trades:</b>	16	6
Carpentry (9)		
Bricklaying (3)		
Electrical installation (1)		
Plumbing (1)		
Highway construction (1)		
Heavy machinery operation (1)		
Library assistant	9	3
Cosmetology	7	2
Production machine operation	7	2
Meat cutting	6	2
Air conditioning and refrigeration	2	1
Drafting	2	1
Interior decorating	2	1
Machine shop	2	1
Radio and television repair	2	1

TABLE III (Continued)  
OCCUPATIONS FOR WHICH COOPERATIVE OCCUPATIONAL EDUCATION  
GRADUATES OBTAINED TRAINING

Occupation	Number	Per Cent
Watch and jewelry repair	2	1
Floristry	2	1
Maintenance	2	1
Custodian	1	*
Upholstery	1	
Mill and feed technology	1	
Photography	1	
Technical cost estimating	1	
Pharmacist's aid	1	
Furrier	1	
Ceramics molder	1	
Knitting specialist	1	
Landscaping	1	
Tire recapping	1	
Hotel-motel management	1	

\*Remaining items on the list less than one per cent each

#### Participation in Extra-Curricular Activities

A larger per cent of the Cooperative Occupational Education graduates took part in extra curricular activities than did Vocational-Technical School graduates. As indicated in Table IV, the major portion of both groups did not take part in extra-curricular activities, and those who did participate did so, in the main, in one or two activities.

#### Types of Post-High School Education And Training Programs in Which Graduates Participated

Approximately two-thirds of both groups of graduates continued their education and training beyond high school as revealed in Table V. A greater per cent of the Cooperative Occupational Education graduates than Vocational-Technical School graduates continued their education by attending private trade schools and business or commercial schools. However, the Vocational-Technical School graduates were attracted to public trade schools, company sponsored classes, and military specialist schools in greater numbers.

TABLE IV  
EXTENT TO WHICH THE TWO GROUPS PARTICIPATED IN  
EXTRA-CURRICULAR ACTIVITIES

Number of Extra-Curricular Activities	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent*	Number	Per Cent*
0	52	56	81	60
1	16	17	26	19
2	18	19	17	13
3	4	4	3	2
4	3	3	2	2
5	1	1	2	2
6	0	0	1	1
7	0	0	0	0
8	0	0	1	1
<b>Total</b>	<b>94</b>	<b>100</b>	<b>133</b>	<b>100</b>

\*Per cent of respondents.

TABLE V  
PARTICIPATION OF GRADUATES IN POST-HIGH SCHOOL  
EDUCATION AND TRAINING

	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Took education or training	62	66	82	62
Took no education or training	32	34	51	38
<b>Total</b>	<b>94</b>	<b>100</b>	<b>133</b>	<b>100</b>

#### Relation of Post-High School Training to High School Training

Approximately 40 per cent of the post-high school training received by Cooperative Occupational Education graduates and 50 per cent of that received by Vocational-Technical School graduates was related to the training received in high school, as indicated in Table VI.

TABLE VI  
RELATION OF POST-HIGH SCHOOL TRAINING TO  
HIGH SCHOOL TRAINING

	Cooperative Occupa- tional Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Related	31	40	60	50
Unrelated	47	60	60	50
Total	78	100	120	100

**Opportunity for Vocational-Technical  
School Graduates to Obtain Work  
Experience While Receiving Training**

As revealed in Table VII, the average number of weeks that Vocational-Technical School graduates had worked while enrolled for training exceeded that of the Cooperative Occupational Education graduates. Thus, the Vocational-Technical School graduates had ample opportunity to obtain work experience while receiving training.

TABLE VII  
HOURS PER WEEK AND NUMBER OF WEEKS WORKED BY  
GRADUATES DURING TRAINING

	Average Number of Weeks	Average Number of Hours Per Week
Cooperative Occupational Education Graduates	37	23.4
Vocational-Technical School Graduates	41	27.4

**Wages Received By Graduates While In  
High School**

The average wage of the Cooperative Occupational Education graduates during their training was 84 cents per hour, while the Vocational-Technical School graduates earned, on an average, \$1.28 per hour in their unsupervised part-time jobs, as reported in Table VIII. Nearly all of the Cooperative Occupational Education graduates had earned less than \$1.25 per hour, whereas approximately one-fifth of the Vocational-Technical School graduates had earned between \$1.50 and \$3.00 per hour.

TABLE VIII  
WAGES RECEIVED BY GRADUATES WHILE IN HIGH SCHOOL

Hourly Wages	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
.50 - .99	70	74	17	22
1.00 - 1.24	21	23	21	27
1.25 - 1.49	2	2	22	28
1.50 - 1.99	0	0	13	17
2.00 - 2.49	0	0	?	4
2.50 - 2.99	1	1	1	1
3.00 - 3.49	0	0	0	0
3.50 - 3.99	0	0	0	0
4.00 - over	0	0	1	1
Total	94	100	78	100
Average Hourly Wage	.84		1.28	

**Length of Time Required to Obtain First Full-Time Jobs**

A larger per cent of the Cooperative Occupational Education graduates were able to make the transition from high school to full-time employment immediately after graduation from high school, as shown in Table IX. Approximately one-half of these graduates were employed immediately after graduation, whereas only ten per cent of the Vocational-Technical School graduates had obtained full-time employment by graduation.

TABLE IX  
LENGTH OF TIME REQUIRED TO OBTAIN FIRST FULL-TIME JOB

Weeks	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent*	Number	Per Cent*
0	47	54	9	10
1 - 3	17	19	34	37
4 - 6	4	5	25	27
7 - 9	3	3	16	18
10 - 12	2	2	1	1
13 and over	15	17	6	7
Total	88	100	91	100

\*Per cent of responses to this item.

**Relation of Initial and Current Jobs  
to Training Received in High School**

As revealed in Table X, a larger per cent of the Cooperative Occupational Education graduates than Vocational-Technical School graduates had accepted initial employment in the same or related occupation for which they had been trained in high school.

TABLE X  
RELATION OF FIRST JOB TO TRAINING  
OBTAINED IN HIGH SCHOOL

Employed in:	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent*	Number	Per Cent*
Same occupation	26	33	15	15
Closely related occupation	7	9	15	15
Slightly related occupation	16	21	16	16
Unrelated occupation	29	37	56	54
Total	78	100	102	100

\*Per cent of responses

A larger per cent of the Vocational-Technical School graduates were currently working in occupations that were either the same or related to the trade for which they had been trained in high school, as shown in Table XI.

TABLE XI  
RELATION OF CURRENT JOB TO TRAINING  
OBTAINED IN HIGH SCHOOL

Employed in:	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Same occupation	17	21	13	18
Closely related occupation	7	9	19	18
Slightly related occupation	14	18	23	22
Unrelated occupation	41	52	45	42
Total	79	100	106	100

### **Opinions of Parents Concerning Time Devoted to Training in the Two Vocational Education Programs**

Parents of both groups of graduates indicated that the time required to participate in Cooperative Occupational Education or the Vocational-Technical School programs was not a major problem for their son or daughter. However, the Cooperative Occupational Education did limit the student's participation somewhat in extra-curricular activities. Approximately one-fourth of the parents of Vocational-Technical School graduates were of the opinion that the time spent in class could have been utilized more effectively through on-the-job training.

### **Opinions of Parents Concerning When Vocational Education Should Be Offered to Youth**

The majority of the parents of Cooperative Occupational Education graduates indicated that their children were mature enough to make decisions concerning their choice of occupations and method of preparation. Only a small per cent of the parents indicated that training should have been postponed until after graduation from high school.

### **Attitudes and Interests of Students Toward School As a Result of Participation in Vocational Education**

More parents of Vocational-Technical School graduates indicated that the vocational education program in which their child had enrolled contributed to improved attitude and interest toward school than did parents of Cooperative Occupational Education graduates. These parents also indicated that Vocational-Technical School graduates were encouraged to seek employment and further training in the occupations for which they were trained.

### **Degree To Which Basic Skills and Competencies Were Developed in the Two Programs**

Approximately equal proportions of the parents of the two groups reported that the two programs prepared their children sufficiently well to enable them to secure employment in the occupation for which they were trained. However, according to the parents, a much larger per cent of the Vocational-Technical School graduates obtained training in the occupation in which they were most interested.

### **Opinions Concerning Salaries Received While Participating in Cooperative Occupational Education**

As indicated in Table XII, approximately one-fourth of the parents expressed the belief that their child worked for an unfair or inadequate wage while receiving on-the-job training in high school. Even so, according to the parents, the chief

reason why nearly one-half of the graduates had enrolled in the course was to earn a salary while in school, and that receiving a salary created a sense of financial responsibility in their children. Over one-half of the parents indicated that earning a salary enabled their children to remain in school and graduate.

TABLE XII  
OPINIONS CONCERNING SALARIES RECEIVED BY COOPERATIVE  
OCCUPATIONAL EDUCATION STUDENTS

The fact that my child received a salary while receiving training in high school:		*SA	A	U	D	SD	Total
Was his chief reason for taking the course	No.	20	25	11	26	12	94
	%	21	27	12	28	13	100
Made him less manageable	No.	1	5	4	38	43	91
	%	1	6	4	42	47	100
Created in him a sense of financial responsibility	No.	37	39	7	8	2	93
	%	40	42	8	9	2	100
Resulted in his working for an unfair wage	No.	7	19	18	40	17	101
	%	7	19	18	40	17	100
Enabled him to remain in school and graduate	No.	15	37	2	25	18	97
	%	16	38	2	26	19	100

\* SA, Strongly Agree; A, Agree; U, Uncertain, D, Disagree; SD, Strongly Disagree

### Opinions of Participating Employers Concerning The Two Vocational Education Programs

Participating employers of Cooperative Occupational Education students apparently look upon the program as a means of:

1. Employing students at a lower wage than normally paid similar full-time or out-of-school employees.
2. Finding a continuous source of part-time employees year after year.
3. Supplementing full-time employees by assigning trainees to the more routine tasks.

On the whole, Vocational-Technical School participating employers were of the opinion that more emphasis should be placed on the development of job skills and about the same emphasis on technical information.

### Employers Rating of the Two Groups of Graduates With Regard to Personal Characteristics, Work Habits and Over-All Competencies

As indicated in Table XIII, a larger portion of Cooperative Occupational Education graduates were rated above average on all personal characteristics by their employers than were Vocational-Technical School graduates.



TABLE XIII  
EMPLOYERS' RATINGS OF GRADUATES ON  
PERSONAL CHARACTERISTICS

Characteristics		Cooperative Occupational Education Graduates**			Vocational-Technical School Graduates***		
		AA*	A	BA	AA	A	BA
Cooperation	No.	18	4	1	39	21	1
	%	78	17	4	64	34	2
Dependability	No.	17	5	1	37	21	3
	%	74	22	4	61	34	5
Moral Character	No.	17	5	1	25	34	1
	%	74	22	4	42	57	2
Adaptability	No.	16	6	1	29	27	5
	%	70	26	4	45	51	8
Physical Fitness	No.	15	7	1	21	40	0
	%	65	30	4	35	66	0
Promptness	No.	15	8	0	27	31	3
	%	65	35	0	44	51	5
Favorable Personality	No.	14	7	2	26	31	4
	%	61	30	9	43	51	7
Maturity	No.	13	9	1	17	37	7
	%	51	39	4	28	60	12
Enthusiasm for his work	No.	13	8	2	32	23	6
	%	57	35	9	53	38	10
Personal Appearance	No.	12	10	1	21	32	8
	%	52	44	4	35	53	13
Ambition	No.	12	10	1	29	26	6
	%	52	44	4	48	43	10
Leadership Ability	No.	8	8	5	13	30	15
	%	38	38	24	22	52	26

\*AA, Above Average, A, Average, BA, Below Average.

\*\*23 employers responded to each item.

\*\*\*61 employers responded to each item.

When asked how they would rate the two groups of employees on trustworthiness, 87 per cent of the employers of the Cooperative Occupational Education graduates, as compared to 76 per cent of the employers of Vocational-Technical School graduates, indicated that they trusted the graduate explicitly, as revealed in Table XIV.

As revealed in Table XV, the employers of Cooperative Occupational Education graduates again rated these graduates higher with respect to loyalty to the employers' business or firm.

TABLE XIV  
RATING OF GRADUATES WITH RESPECT TO TRUSTWORTHINESS

I would:	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Trust this employee explicitly	20	87	45	76
Have some reservations about his (her) trustworthiness	3	13	12	21
Not trust this employee without supervision	0	0	2	3
Total	23	100	59	100

TABLE XV  
RATING OF GRADUATES WITH RESPECT TO LOYALTY BY THEIR EMPLOYERS

I believe this employee would:	Cooperative Occupational Education Graduates		Vocational-Technical School Graduates	
	Number	Per Cent	Number	Per Cent
Support my firm or business completely	15	68	39	65
Look upon my firm or business as "only a job", but would support it.	7	32	20	33
Not support my business or firm in the least.	0	0	1	2
Total	22	100	60	100

A larger per cent of Cooperative Occupational Education graduates were rated by their employers as above average on all work habits except two—interest in his work and ability to think for himself, as indicated in Table XVI.

TABLE XVI  
EMPLOYERS' RATINGS OF GRADUATES ON WORK HABITS AND TRAITS

Work habits and traits		Cooperative Occupational Education Graduates*			Vocational-Technical School Graduates**		
		***AA	A	BA	AA	A	BA
Ability to do his work	No.	16	5	1	31	27	3
	%	73	23	5	51	44	5
Willingness to do his work	No.	15	6	1	36	24	1
	%	68	27	5	59	39	2
Ability to get along with fellow workers	No.	15	7	0	30	29	2
	%	68	32	0	49	48	3
Ability to get along with supervisors	No.	15	6	1	34	25	2
	%	68	27	5	56	41	3
Careful, steady worker	No.	13	8	1	29	30	4
	%	59	36	5	44	49	7
Takes advantage of new tools, processes and procedures	No.	13	6	3	22	34	4
	%	59	27	14	37	57	7
Ability to follow directions	No.	13	9	0	26	33	2
	%	59	41	0	43	54	3
Willingness to start at the bottom and work up	No.	12	9	1	21	38	1
	%	55	41	5	35	63	2
Standards of workmanship	No.	11	10	1	21	36	4
	%	50	46	5	35	59	7
Safety minded	No.	11	11	0	23	35	3
	%	50	50	0	38	57	5
Sound judgement	No.	10	10	2	20	36	5
	%	46	46	9	33	59	8
Interest in his work	No.	10	10	2	33	24	4
	%	46	46	9	54	39	7
Ability to think for himself	No.	10	10	2	22	33	6
	%	46	46	9	36	54	10
Self confidence	No.	9	10	0	25	32	3
	%	41	46	14	42	43	5

\*22 employers responded to each item.      \*\*\*AA - Above Average, A, Average,  
\*\*61 employers responded to each item.      BA, Below Average

As revealed in Table XVII, employers of Cooperative Occupational Education graduates reported greater proportions of above average ratings on all items with respect to competencies on the job. The difference in ratings with respect to general education was very slight.



TABLE XVIII  
COSTS OF THE TWO PROGRAMS\*

Course	Equip- ment**	Build- ings***	In- stalla- tion**	Mainten- ance**	Instruc- tional Material**	Trans- porta- tion****	Instructional Personnel****
Cooperative Occupa- tional Education			42,000		2,000	1,500	44,800
Vocational-Technical:							
Data Processing	200,000	12,300	2,000	7,000	700		
Machine Shop	80,000	46,000	5,000	300	450		
Electricity- Electronics	40,000	22,700	100	300	300		
Welding	20,000	25,000	10,000	300	2,500		
Sheetmetal	7,500	24,000	300	50	400		
Drafting	6,000	14,000		50	250		
Automotive Mechanics	5,000	50,000		50	500		
Auto Body Fender	5,000	55,000		100	750		
Woodwork	4,000	24,000	200	100	1,000		
Expenses not broken down by course						9,300	83,300

\*Cost in some cases partially reimbursed from state and federal funds.

\*\*Value estimated by the Director of Vocational-Technical Education.

\*\*\*Cost of building calculated at \$12 per square foot.

\*\*\*\*Actual cost obtained from school records and state reports.

uates, although the latter group earned slightly higher marks in these courses.

Marks earned by Vocational-Technical School graduates were slightly higher than those of Cooperative Occupational Education graduates in their respective vocational education courses.

Only two Cooperative Occupational Education graduates obtained two years of vocational training in high school, whereas approximately one-fourth of the Vocational-Technical School graduates obtained this amount of such training.

Vocational-Technical School graduates had received training in nine occupations, whereas the Cooperative Occupational Education graduates had received training in 42 different occupations, 80 per cent of which were in four occupational fields.

The fact that Cooperative Occupational Education students required transportation to their respective training stations did not seem to encourage them to purchase an automobile while in high school any more than the Vocational-Technical School graduates.

The two groups of graduates had not participated in extra-curricular activities to a great extent, and then in only one or two activities. Graduates of the Cooperative Occupational Education program, as well as their parents, indicated that the program had limited participation of the students in extra-curricular activities. However, only a few graduates indicated that they would have participated to a greater degree if they had had the opportunity.

Slightly more Cooperative Occupational Education graduates than Vocational-Technical School graduates continued their education and training beyond high school. The majority of both groups who had continued their training did so by attending a four-year college or university, company sponsored classes, or adult evening classes.

When the two groups of graduates attended trade school, Cooperative Occupational Education graduates chose private trade schools, in the main, whereas Vocational-Technical School graduates chose public trade schools.

On the whole, the time spent in additional education and training was approximately two weeks longer for Vocational-Technical School graduates than for Cooperative Occupational Education graduates.

Forty per cent of the additional education or training pursued by Cooperative Occupational Education graduates, and 50 per cent of that pursued by Vocational-Technical School graduates was related to the training they had obtained in high school.

A major portion of both groups of graduates had worked prior to their enrollment in their respective vocational education programs. The two groups had worked approximately the same number of hours prior to their high school training. The Cooperative Occupational Education graduates had worked to a greater extent in sales, service, and unskilled occupations, whereas a larger per cent of the Vocational-Technical School graduates had worked in clerical and semi-skilled occupations.

More than one-half of the Vocational-Technical School graduates had worked while receiving training in high school. The major portion of these graduates had worked in service occupations, skilled, and semi-skilled occupations. They had worked, on an average, more weeks and hours per week on unsupervised jobs

than had Cooperative Occupational Education graduates on their supervised jobs.

Vocational-Technical School graduates had earned a higher average salary on their part-time jobs than had Cooperative Occupational Education graduates on their supervised jobs.

Cooperative Occupational Education graduates were able to make the transition from school to full-time employment more quickly than Vocational-Technical School graduates.

The method most often utilized by graduates to obtain their first full-time jobs was through personal interviews. The next most-often-mentioned methods were: help of a friend and help of a relative. More Cooperative Occupational Education graduates than Vocational-Technical School graduates had obtained their first job through the vocational education program.

Approximately one-fourth of the Vocational-Technical School graduates indicated that no full-time job was available in the occupation for which they were trained. Reasons most often given by Cooperative Occupational Education graduates for not working in occupations for which they had been trained were: they had found better opportunities in other occupations, and they had never intended to follow that line of work.

A larger per cent of the Cooperative Occupational Education graduates had worked in clerical and service occupations after graduation from high school, whereas Vocational-Technical School graduates had worked in greater numbers in skilled and semi-skilled occupations.

The more recent graduates of the Vocational-Technical School had held fewer jobs, on the average, than had recent graduates of Cooperative Occupational Education programs.

When the two groups of graduates changed jobs, they did so to obtain better jobs, in a larger number of cases. The major reasons for terminating employment were to enter college or to fulfill military obligations.

Vocational-Technical School graduates had been unemployed for shorter periods of time than Cooperative Occupational Education graduates. Three-fourths of the former and one-third of the latter group who had been unemployed were unemployed for a period of four weeks or less.

Cooperative Occupational Education graduates had moved a greater distance to obtain jobs than had Vocational-Technical School graduates.

A larger per cent of the Cooperative Occupational Education graduates than Vocational-Technical School graduates obtained their initial jobs in the same occupation for which they were trained or a closely related one; however, when current jobs were considered, the opposite was true.

On the whole, both groups of graduates indicated that they were well satisfied with the jobs they had held since graduation from high school. As the graduates changed jobs, they were better satisfied.

Job changes also contributed to greater economic rewards since salaries of both groups increased with each job change.

Vocational-Technical School graduates had received a higher average beginning salary than Cooperative Occupational Education graduates. This was also generally true with respect to their current jobs.

Parents of both groups of graduates indicated that the time required to participate in the two vocational education programs was not a major problem. In their opinions, there was ample time to complete class assignments, fulfill other responsibilities at home, and take part in family activities and community affairs.

Approximately one-third of the parents of Vocational-Technical School graduates were of the opinion that the time required for training could have been utilized more effectively through an on-the-job training program.

The majority of both groups of parents were of the opinion that the training should remain on the high school level rather than be moved to the post-high school level.

More parents of Vocational-Technical School graduates indicated that the vocational education program in which the children had enrolled contributed to improved attitudes and interest toward school than did parents of Cooperative Occupational Education graduates. These parents also indicated that Vocational-Technical School graduates were encouraged to seek employment and further training in occupations for which they were trained.

Approximately equal proportions of the parents of the two groups reported that the two programs prepared their children well enough for them to secure employment in the occupation for which they were trained.

Cooperative Occupational Education graduates were able to make the transition from school to full-time employment more quickly than Vocational-Technical School graduates.

Parents of Cooperative Occupational Education graduates indicated that earning a salary while receiving training was an influencing factor in their children's decision to choose that method of training. This salary created a sense of financial responsibility in the students and provided needed funds.

Most participating employers of Cooperative Occupational Education graduates were of the opinion that the program was an excellent method of obtaining full-time and part-time workers. However, a comparatively large per cent of Cooperative Occupational Education participating employers reported difficulties in complying with the requirement to employ students for a minimum of 15 hours per week and in retaining workers after graduation from high school.

Some employers looked upon the Cooperative Occupational Education programs chiefly as a means of securing part-time employees at lower wages, of readily available help, and of supplementing regular full-time workers.

On the whole, participating employers were of the opinion that more emphasis should be placed on the development of job skills and about the same emphasis on technical information.

Cooperative Occupational Education graduates were rated consistently above average on all personal characteristics by their employers whereas Vocational-Technical School graduates were rated somewhat lower. However, when the two groups were compared on a combined rating of average and above on all characteristics, the Vocational-Technical School graduates surpassed the Cooperative Occupational Education graduates on four characteristics.

Both groups of graduates were reported to be somewhat lacking in leadership ability.



A larger proportion of the Cooperative Occupational Education graduates were rated higher on trustworthiness and loyalty than Vocational-Technical School graduates.

Cooperative Occupational Education graduates were rated above average on all work habits except self-confidence and interest in their work. When a combined rating of average and above was considered, Vocational-Technical School graduates were rated in this manner on six of the twelve items.

A larger per cent of Cooperative Occupational Education graduates than Vocational-Technical School graduates were rated above average on over-all competencies in all four areas: job skills, technical knowledge, personality, and general education.

Cooperative Occupational Education graduates placed greater emphasis on personal relationship skills, whereas Vocational-Technical School graduates placed more emphasis on reading and interpretive skills.

The cost of establishing and operating the Vocational-Technical School program was much more expensive than that of operating the Cooperative Occupational Education program. However, this cost was somewhat offset by the fact that approximately 1,750 adult trainees were utilizing the Vocational-Technical School facilities.

### Conclusions

No claim, of course, is made that the sample included in this study is truly representative of similar programs and graduates in all parts of the country. However, it is believed that the study reflects the true situation in Springfield, Missouri, and to the extent that the data are representative of similar programs in other cities, the conclusions which follow apply to them also.

Students enrolling in Cooperative Occupational Education and Vocational-Technical School programs are likely to be more similar than different with respect to intelligence, percentile rank, class rank and grade point average.

There are more opportunities for training of both sexes in part-time Cooperative Occupational Education programs than in full-time Vocational-Technical programs.

Cooperative Occupational Education graduates and graduates of Vocational-Technical Schools may be expected to participate to about the same extent in non-vocational subjects and other curricular activities. Neither group is likely to participate to a great degree in extra-curricular activities.

Both vocational education programs serve to maintain student interest and improve attitudes toward school. The Vocational-Technical School programs seem to have a greater impact in these respects than do the Cooperative Occupational Education programs.

Cooperative Occupational Education and Vocational-Technical School graduates tend to place different values on their high school vocational training: Cooperative Occupational Education graduates emphasize the development of desirable personal-social characteristics, while Vocational-Technical School graduates emphasize job skills and related knowledge.

Many graduates of high school vocational programs apparently discover shortcomings in their educational backgrounds and consequently seek further education or training, generally in fields closely related to their high school program. Comparatively large numbers of these graduates go on to college, even though their high school experiences may not lead in this direction. Continuing vocational training programs in the public school facilities afford more attraction to Vocational-Technical School graduates—possibly due to previous experiences and familiarities with these facilities.

Transition from school to full-time employment is made more quickly and easily through part-time Cooperative Occupational Education programs since many of those trained in this program are able to remain in the business or firm where they receive their on-the-job training.

High school students enter the vocational education programs with a wide range of experience, regardless of the type of program pursued. Cooperative Occupational Education graduates tend to work in the clerical and service occupations prior to their high school vocational training, concurrently with the training and after graduation from high school. There is a tendency for the Vocational-Technical School graduates to be employed in semi-skilled occupations during comparable periods.

Vocational-Technical School graduates have ample opportunity to acquire experience while receiving training, and a majority take advantage of the opportunity. However, this work experience is not likely to be related to the training pursued in high school.

The major portion of graduates of both types of programs do not immediately follow the occupation for which they were trained; however, after a period of adjustment, the Vocational-Technical School graduates tend to return to the occupation for which they trained in greater numbers than do Cooperative Occupational Education graduates.

Both groups of high school graduates are likely to experience unemployment to only a small degree. Most all will be satisfied with their jobs, and if they change jobs, they are likely to better their position in doing so.

On the basis of employer ratings, Cooperative Occupational Education graduates may be expected to demonstrate more desirable personality traits, work habits, and a higher level of occupational competency than Vocational-Technical School graduates.

Employers of Cooperative Occupational Education students have a tendency to utilize these students to perform routine jobs and to supplement full-time employees. Generally, they do not pay them as well as they do youth on unsupervised jobs.

The cost of establishing and operating Vocational-Technical School programs is much greater than Cooperative Occupational Education programs. However, since both programs tend to support and supplement each other, they should be developed in communities where financial means will permit, thus meeting the needs of a diverse student population.

### Recommendations

A very small number of students taking Cooperative Occupational Education had enrolled in the program for two years of training; some of their occupations may not have required more training than this. Greater effort should be made to encourage students who are interested in this method of training to choose occupations which have sufficient depth to warrant a longer period of training.

A more equitable salary should be provided for Cooperative Occupational Education students in their school-sponsored jobs to bring these salaries more in line with those received by Vocational-Technical School students in their non-sponsored part-time jobs. Participating employers of this group should be made more aware of the principles and objectives of this program. Students should be discouraged from working for "any salary" in order to have a part-time job while in high school.

Since fewer Cooperative Occupational Education graduates attend public trade schools for post-high school training, they should be made more aware of the opportunities available in public Vocational-Technical Schools in their home community.

The fact that one-fourth of the graduates of the Vocational-Technical School indicated that no job was available in the occupation for which they were trained, suggests that it would be advisable to study placement opportunities and procedures for all graduates with the view of improving the placement service.

In view of the fact that employers rate Vocational-Technical School graduates somewhat lower on nearly all personal characteristics, work habits, and over-all competencies, an effective program of instruction should be developed for this group which would lead to the improvement of these traits.

An attempt should be made to correlate existing work experiences with Vocational-Technical School courses, and provide additional experiences in jobs that are related to their training, since more than one-half of these students are likely to work part-time while they are in school.

Since a large number of both groups of graduates had not worked in occupations for which they were trained, an evaluation of the counseling and guidance program provided for these students should be made. In addition, the training programs themselves should be studied to ascertain whether or not the courses offered are related to labor market needs, and the training given is of such depth that the graduates are in demand by local businesses and industry.

An effective placement and follow-up program should be available for current graduates, as well as for those former graduates who are in need of this service.

More than one-fourth of both groups of graduates had attended a four-year college or university. Since there is a shortage of teachers in the area of industrial education, attempts should be made to guide promising graduates of these programs into the area of industrial teaching.

The lack of leadership ability by both groups, and the importance of this ability to advancement and success on the job, would indicate that more study and emphasis should be focused on the development of this trait.