PERSONNEL NEEDS OF IOWA'S AUTOMOTIVE SERVICE INDUSTRY

by

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This is a summary of a field study submitted to Iowa State University of Science and Technology by Dale Peter Schumacher in partial fulfillment of the requirements for the degree of Master of Education.

The study was conducted with the cooperation of the Iowa State Department of Public Instruction and the Industrial Education Department at Iowa State University.

The study was conducted under the direction of Professor Lowell L. Carver.

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PURPOSE OF THE STUDY

The Vocational Education Act of 1963 provided the impetus and financial assistance for vocational and technical education. Following this federal act, the legislature of the state of Iowa passed Senate File 550 which legalized the establishment and operation of Iowa's Area Schools. With the establishment of the area schools, the need was created for extensive research in planning the programs to meet the needs of industry. The research can help educators and their advisory committees to determine the number and type of programs that can best meet the needs of the students and industry throughout the state.

There are automotive programs in each of the merged area schools in Iowa, but there has been no state-wide survey to determine if the present programs are needed and are adequate to meet the employment needs of Iowa's automotive service industry. After consulting with the Industrial Education Department at Iowa State University and with the State Department of Public Instruction, Vocational Education Branch, it was decided that this study should be conducted in the area of automotive service personnel needs. The purpose of the study was to determine the industries' immediate personnel needs, to determine the projected personnel needs through 1971, and to determine the number of persons who should attend additional part-time classes.

The objectives of the study were:

1. To determine the personnel needs of Iowa's automotive service industry both state-wide and by merged area.

2. To determine the number of automotive service personnel needed to fill the present needs in Iowa and to determine the projected needs for the next three years.

3. To determine the number of employees that could profit from part-time evening classes and to identify the major emphasis for these classes.

4. To identify the in-service training programs now being operated in the automotive service industry in Iowa.

5. To determine a state-wide employee turnover percentage for each job classification.

Delimitations of the Study

This study was limited to the automotive service firms that are members of the Iowa Automobile Dealers Association (IADA) and the Independent Garage Owners of Iowa (IGO). This includes almost all of the new car dealers and a sampling of the smaller independent garages. Included in the IADA membership are a few implement dealers who have a truck franchise.

Definitions

In order to clarify the meaning of various terms used in this study, the following definitions were used.

Merged Area is where two or more county school systems, or parts thereof, merge resources to establish and operate an area vocational school or an area community college in the state.

Skilled Worker refers to one competent to perform, with a high degree of expertness, the work in one or more specialized divisions of a given trade.

Automotive Service Industry refers to the repair and maintenance of automobiles and not to the fabrication and assembly of them. This study is concerned with the service of automobiles and not the manufacture of them.

Funding

A research proposal, stating the objectives of the study, method of procedure, review of literature, and budget required to defray the cost of the study, was submitted to Research Coordinating Unit, Vocational Education Branch, Iowa State Department of Public Instruction in 1968. The committee approved the proposal and allocated the funds to cover the expenses.

METHOD OF PROCEDURE

After the research project was approved, the review of literature and preparation of the questionnaire began.

The population included all of the new car dealers in the state as obtained from the mailing list of the Iowa Automobile Dealers Association. This list included 909 dealers. A sam-

pling of the independent garages and service firms was obtained by contacting the membership of the Independent Garage Owners of the state. This membership of 122 includes independent garages, service stations, auto parts retailers, and speciality shops. The total mailing list totaled 1031 firms.

Because of the difficulty in placing the many small towns in the correct merged area, it was decided to separate the merged areas by the closest county lines instead of by the school district lines. This was done with the approval of the State Department of Public Instruction.

After extensive research and consultation, a main questionnaire was developed that would ascertain the personnel needs and give some indication of the training requirements necessary to enter the field. This rough draft was taken personally to several dealers of varying sizes to see what their impression was and to secure any suggestions for improvement. Several minor improvements were suggested to improve the instrument, but almost without fail, they commented that the questionnaire was too long and too comprehensive and that they felt the dealers would not take the time and effort to complete and return it.

After consulting with the State Department of Public Instruction and Iowa State University, it was decided that it would be better to limit this study to determining the personnel needs and to have another study, at a later time, to determine the training requirements. It was decided that the present study should also try to determine what additional part-time evening classes were preferred by the dealers and their employees. Efforts were then directed towards developing a new questionnaire that would provide this information.

A new one-page questionnaire was developed and was taken or sent to several dealers located across the state. Their comments and suggestions were incorporated into the final questionnaire that was used in the study. A cover letter and description sheet were developed along with the questionnaire and were evaluated by the same firms.

The final questionnaire was divided into two basic parts. The first section was designed to obtain their personnel requirements -- that is, present employees; present vacancies; turnover percentage; new employees needed in 1969, 1970, and 1971; and replacement employees needed in 1969, 1970, and 1971. They were also asked to indicate what they felt was the present supply of workers and if they had any organized in-shop training programs. This section was broken into fourteen different job classifications commonly found in a service establishment.

Part two of the questionnaire was designed to determine what additional part-time evening classes might be of interest and how many employees the firms feel should enroll in a particular class.

Both the Iowa Automobile Dealers Association and the Independent Garage Owners of Iowa were contacted for endorsement letters. Each organization supplied a letter which was duplicated and included with the main questionnaire on each of the mailings.

The first mailing of the questionnaire netted a return of only 26.9 per cent. With such a low return on the first mailing, it was decided to mail a complete questionnaire along with the follow-up letter. On each of the follow-up letters was handwritten, "We need a 100% return. Please send yours back!". This first follow-up brought the return up to 63.1 per cent. Approximately two weeks after the first follow-up mailing, a third letter and questionnaire were sent to those who had not responded. On this follow-up letter was this handwritten note, "We need this information from your firm. Would you please help?". This brought the final response to 76.7 per cent, or a total of 791 responses out of a possible 1031. As the questionnaires were returned, a number of the responses were eliminated from the study for the following reasons: out of business, 16; does not apply to our firm, 30; blank questionnaires, 8; wrong addresses, 5; and duplicate names, 5. These 64 responses were removed, leaving 727 usable responses from the 791 questionnaires returned.

The data obtained from the questionnaire were coded and placed on IBM punched cards for sorting and tabulation at the Iowa State University Computer Center. The data were then presented in tabular or graphical form.

FINDINGS

The purpose of this study was to ascertain personnel needs for the automotive service industry of Iowa. The study was divided into two areas: the first to consider the need for trained personnel, both immediate and projected three years ahead, and the second to consider the additional training, in the form of part-time classes desired by the service firms.

Survey Response

The population of the study consisted of the members of the Iowa Automobile Dealers Association (IADA) and the Independent Garage Owners of Iowa (IGO). The IADA is the larger of the two organizations with 909 members, a figure which includes all of the new car dealers in Iowa. The IGO is a smaller number, 122, but it did give a sampling of the smaller independent garages. The total population was 1031 service firms.

Of the 1031 firms included in the study, 791 returned their questionnaires for a return percentage of 76.7. The members of IGO returned 99 of 122 questionnaires for a 81.1 per cent return, while the members of IADA had a return of 76.1 per cent from 692 of 909 questionnaires. The data in Table 1 show the number, distribution, and percentage of firms responding to the questionnaire. IGO was represented by firms located in eight of the merged areas with a concentration of firms located in merged areas X and XII. IADA was well represented by firms in all merged areas.

The return percentage was fairly consistent for all of the merged areas, with the firms in merged area III having the highest return of 86.8 per cent and the firms in merged area XIII having the lowest return of 64.8 per cent. The largest number of firms were in merged areas V, X, and XI with representation of 90, 136, and 104 respectively.

When the questionnaires were returned a number of them were not usable and were eliminated from the study for the following reasons: out of business, 16; does not apply to our firm, 30; blank questionnaires, 8; wrong addresses, 5; and duplicate names, 5. These 64 questionnaires were removed, leaving 727 usable responses.

Table 1. Number, distribution, and percentage of firms responding to the questionnaire

Merged area	IADA N	IADA Number returned	IADA %	IGO N	IGO Number returned	IGO %	Total N	Total Number returned	Total %
I	55	40	72.7	0			55	40	72.7
II	54	39	72.2	5	5	100	59	44	75.5
III	38	33	86.8	0			38	33	86.8
IV	41	29	70.7	0			41	29	70.7
V	90	69	76.6	0			90	69	76.6
VI	46	37	80.4	1	1	100	47	38	80.8
VII	67	57	85.1	2	2	100	69	59	85.5
VIII	32	26	81.2	13	10	76.9	45	36	80.0
IX	52	38	73.1	17	15	88.2	69	53	76.8
X	92	73	79.3	44	35	79.5	136	108	79.4
XI	97	72	74.2	7	7	100	104	79	75.9
XII	50	38	76.0	33	24	72.7	83	62	74.7
XIII	71	46	64.8	0			71	46	64.8
XIV	33	26	78.7	0			33	26	78.7
XV	58	43	74.1	0			58	43	74.1
XVI	33	26	78.7	0			33	26	78.7
State total	909	692	76.1	122	99	81.1	1031	791	76.7

Employment of Area School Graduates

One of the questions asked on the questionnaires was if the firm would employ graduates of the area vocational-technical schools. The responses to this question are presented in Table 2.

Table 2. Response to "Would you employ graduates of area vocational-technical schools?"

Merged area	Yes	No	No response
I	31	2	6
II	33	4	6
III	30	1	2
IV	21	1	7
V	51	4	11
VI	32	1	3
VII	43	1	9
VIII	25	0	3
IX	38	2	6
X	70	3	15
XI	61	5	8
XII	41	1	12
XIII	36	2	6
XIV	20	0	6
XV	32	1	9
XVI	24	0	2
State total	588	28	111

Of the 727 questionnaires used, 588 firms, or 80.8 per cent, indicated they would employ graduates of the vocational-technical schools while 28 firms, or 3.8 per cent, indicated they would not. All of the firms in areas VIII, XIV, and XVI reported they would employ area school graduates. The firms in merged area XI had the largest number (5) of "no" responses.

For the remainder of the study, the information from the questionnaires marked "no response" has been combined with the "yes" responses. It was felt the "no response" indicated they either had no strong feelings about the question or had forgotten to answer it. Either way, it was felt the final results would not be affected appreciably. The information from the "no" responses has been treated separately.

State-wide Employment Patterns

The data in Table 3 show the state-wide employment patterns and projected employment needs for 1969, 1970, and 1971. The projected employment data are divided into new and replacement employees.

The largest projected employee need for all three years is for general auto mechanics with 622 needed in 1969, 580 needed in 1970, and 512 needed in 1971. The next largest needs were for automobile salesmen and for auto body repairmen. The number of new employees needed was consistently between three and four times larger than the need for replacement employees. The need for radio men was the smallest of any of the job classifications surveyed with only 3 needed in 1969, 4 needed in 1970, and 2 needed in 1971.

Projected Employment Needs

Table 4 data show the number of employees needed in each job classification by merged area for 1969. The figures given are the total of new and replacement employees for the year. In the general auto mechanic class, the firms in each merged area needed at least 10 employees with the firms in area XI needing 89.

The number of employees needed in each job classification by merged area for 1970 are shown by the data in Table 5. The firms indicated the greatest need existed in the classifications of general auto mechanics, automobile salesmen, and auto body repairmen. The firms in each of the merged areas indicated an interest in auto mechanic apprentices with the firms in both merged areas VI and X indicating a need for 15 employees.

The data in Table 6 show the number of employees needed in each job classification by merged area for 1971. The needs shown by the data in Tables 4, 5, and 6 are from those firms who indicated they would employ area vocational-technical school graduates and from those firms that did not respond when asked if they would hire these graduates.

Table 3. State-wide employment patterns and projected employment needs*

Job classification	Present number of employees	Current number of vacancies	New employees 1969	New employees 1970	New employees 1971	Replacements 1969	Replacements 1970	Replacements 1971	Total new and replacement employees 1969	1970	1971
Auto mechanic (general)	1945	367	454	392	348	168	188	164	622	580	512
Auto mechanic apprentice	281	68	93	86	74	33	31	31	126	117	105
Truck mechanic	311	84	95	84	72	31	39	38	126	123	110
Tune-up specialist	187	33	46	35	40	12	12	13	58	47	53
Front-end alignment man	172	44	38	22	25	11	15	11	49	37	36
Used car reconditioning man	379	95	100	56	52	35	38	34	135	94	86
Auto body repairman	606	150	162	134	113	40	37	40	202	171	153
Transmission mechanic	169	56	54	29	28	11	14	14	65	43	42
Air conditioning mechanic	99	37	32	22	23	8	8	13	40	30	36
Radio man	6	4	3	4	2	0	0	0	3	4	2
Lubrication man	382	40	63	40	33	47	34	42	110	74	75
Service manager	430	27	33	20	19	12	11	9	45	31	28
Parts man	731	57	80	58	45	35	31	35	115	89	80
Automobile salesman	1307	214	202	145	116	70	63	62	272	208	178

*Based on 699 responding firms

Table 4. Number of employees needed in each job classification by merged area in 1969 (total new and replacement employees)*

Job classification	Merged areas I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	State total
Auto mechanic (general)	24	33	20	16	55	35	45	36	46	64	89	44	46	10	35	24	622
Auto mechanic apprentice	2	6	4	4	10	14	11	9	8	15	12	6	8	5	4	8	126
Truck mechanic	3	10	5	3	8	10	10	6	4	24	17	10	4	1	8	3	126
Tune-up specialist	0	3	0	0	6	4	9	6	4	10	3	7	2	0	2	2	58
Front-end alignment man	3	0	2	0	6	1	2	4	5	8	3	5	7	0	0	3	49
Used car reconditioning man	7	7	5	8	10	6	9	11	5	17	10	15	7	3	9	6	135
Auto body repairman	8	15	8	1	17	12	21	16	11	25	11	22	16	8	6	5	202
Transmission mechanic	1	2	1	0	4	2	5	4	5	9	8	6	7	2	3	6	65
Air conditioning mechanic	1	2	2	0	4	3	4	3	5	2	5	4	4	0	0	1	40
Radio man	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Lubrication man	8	7	8	3	9	8	5	7	7	17	5	9	9	2	4	2	110
Service manager	2	1	5	1	3	1	1	2	4	6	2	8	2	1	5	1	45
Parts man	4	10	3	2	9	4	10	13	10	13	7	13	11	3	8	5	115
Automobile salesman	8	18	13	8	22	16	30	17	16	35	25	20	22	3	9	10	272

*Based on 699 responding firms

Table 5. Number of employees needed in each job classification by merged area in 1970 (total new and replacement employees)*

Job classification	Merged areas I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	State total
Auto mechanic (general)	32	36	22	19	53	36	35	30	43	52	70	49	40	6	33	24	580
Auto mechanic apprentice	8	3	3	2	8	15	12	8	9	15	10	5	6	5	3	5	117
Truck mechanic	5	12	8	0	8	5	7	7	6	23	21	11	3	0	5	2	123
Tune-up specialist	0	2	0	0	4	3	3	4	5	7	5	11	2	0	0	1	47
Front-end alignment man	0	0	2	0	3	1	2	4	3	7	3	5	4	1	0	2	37
Used car reconditioning man	6	7	4	4	8	7	8	7	4	9	5	11	5	1	6	2	94
Auto body repairman	7	15	5	1	17	10	17	13	4	24	11	16	12	5	8	6	171
Transmission mechanic	1	3	0	0	6	3	3	2	3	4	8	7	1	0	1	1	43
Air conditioning mechanic	0	2	0	1	2	3	0	2	3	5	4	3	3	0	2	0	30
Radio man	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	0	4
Lubrication man	2	9	5	3	8	5	3	5	0	9	5	6	5	1	7	1	74
Service manager	3	3	2	2	0	0	3	3	1	1	1	6	2	1	1	2	31
Parts man	3	11	0	3	5	3	6	3	8	12	8	11	5	2	5	4	89
Automobile salesman	8	13	9	9	16	9	24	13	15	24	14	10	20	3	14	7	208

*Based on 699 responding firms

Table 6. Number of employees needed in each job classification by merged area in 1971 (total new and replacement employees)*

Job classification	Merged areas I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	State total
Auto mechanic (general)	22	33	14	10	54	36	38	22	42	41	74	44	32	5	24	21	512
Auto mechanic apprentice	2	3	4	2	7	15	12	8	9	11	7	5	7	4	3	6	105
Truck mechanic	4	14	5	0	8	3	5	6	6	16	21	11	3	0	5	3	110
Tune-up specialist	2	3	1	0	6	3	6	4	6	9	3	8	2	0	0	0	53
Front-end alignment man	0	2	2	0	3	0	0	5	3	7	4	5	5	0	0	0	36
Used car reconditioning man	3	7	3	2	8	6	7	6	5	7	5	14	5	1	6	1	86
Auto body repairman	6	13	4	0	16	8	19	11	5	15	13	21	12	4	4	2	153
Transmission mechanic	1	3	0	0	4	4	3	2	3	4	7	8	1	0	1	1	42
Air conditioning mechanic	2	1	1	0	4	4	3	2	4	3	4	4	3	0	1	0	36
Radio man	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
Lubrication man	2	7	7	2	8	6	1	5	3	9	4	9	5	1	6	0	75
Service manager	4	2	2	0	0	3	1	2	2	3	0	5	1	1	1	1	28
Parts man	1	7	5	2	6	6	6	1	10	8	7	12	3	1	4	1	80
Automobile salesman	3	14	8	3	15	11	22	12	12	18	14	13	15	2	9	7	178

*Based on 699 responding firms

Employees not Obtained from Vocational Programs

The needs of the firms that indicated they would not employ vocational-technical school graduates were tabulated separately. The employment needs of the 28 firms that responded "no" were small in all categories except general auto mechanics where they indicated they needed 9 employees in 1969, 7 in 1970, and 7 in 1971.

Additional Part-time Classes

One of the objectives of the study was to determine the number of employees that should attend part-time evening classes and to identify the major emphasis for these classes. Data presented in Table 7 show the need for additional training classes in fourteen different suggested classes. The results are given for each of the merged areas and for the state as a whole. The number given is the number of employees that the firms indicated should attend this class if it was offered in their vicinity.

As indicated by the state-wide data, the firms reported a high degree of interest for classes in the electrical field. They indicated 639 employees should attend a class on using modern tune-up equipment, 587 should attend a class on electrical diagnosing, and 454 should attend a class on alternator servicing. Considerable interest was shown for the customer relations class by the firms where they indicated 499 employees should attend. The classes relating to the body and fender field were indicated with varying amounts of frequency with door, hood, and deck lid alignment ranking first where 211 employees should attend and auto body repair close behind where 201 employees should attend. The firms expresssed high interest in automatic transmission diagnosing and servicing, and automobile air conditioning servicing where they indicated 441 and 401 employees, respectively, should attend.

Interest was high in each of the merged areas for a class on the use of modern tune-up equipment. The firms in merged area XI indicated 80 employees should attend this class, while the firms in merged area XIV indicated that a low of 17 employees should attend. The other areas were located in between. Likewise, interest was high in each of the merged areas for both electrical diagnosing and alternator servicing.

Several firms suggested additional classes that could be offered on a part-time evening basis. Some of the more frequently suggested classes were salesmanship and merchandising, diesel servicing, and vacuum system servicing.

Table 7. Number of employees that the firms indicated should attend additional training classes*

Course title	Merged areas																State total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	
Use of modern tune-up equipment	38	29	23	26	51	39	40	28	43	57	80	59	40	17	39	30	639
Electrical diagnosing	32	28	18	17	40	32	26	28	46	64	90	56	35	13	38	24	587
Alternator servicing	27	15	12	17	43	24	30	21	33	48	47	50	31	9	28	19	454
Automatic transmission diagnosing and serv.	23	23	15	21	37	32	22	21	36	53	45	26	26	13	32	16	441
Auto. air conditioning servicing	19	18	22	14	36	27	21	14	29	45	48	31	24	13	27	13	401
Power steering diag. and reconditioning	13	11	14	6	28	16	18	12	32	38	32	27	27	7	23	18	322
Complete brake service	10	12	8	6	17	9	15	18	33	31	23	33	20	0	21	17	273
Customer relations	28	16	23	19	35	16	52	15	40	86	44	31	44	4	22	24	499
Front-end alignment	15	6	18	7	23	20	16	14	21	26	37	25	17	1	16	8	270
Auto body repair	10	9	14	1	18	14	17	23	14	14	24	9	17	2	10	5	201
Frame alignment and straightening	4	3	3	1	8	6	12	10	9	6	9	6	9	1	6	3	96
Glass replacement	7	4	6	3	10	6	11	10	11	11	10	14	5	3	8	5	124
Painting	8	10	9	1	16	10	16	13	14	17	13	8	13	2	10	4	164
Door, hood, and deck lid alignment	9	7	17	8	17	10	12	17	24	19	19	15	11	4	10	12	211

*Based on 727 responding firms

Organized In-shop Training Programs

The data in Table 8 indicate the number of organized in-shop training programs operated by the responding firms. The most frequent training program was for general auto mechanics with auto mechanic apprentices ranking second. The firms operated 39 training programs for salesmen. Many of the firms offered in-shop training programs for general auto mechanics, but only the larger firms offered them in the specialized classifications.

Employee Turnover

Each of the firms surveyed was asked to indicate the total number of individuals it had on the payroll from December 1967 to December 1968 and the number of individuals it had lost during the same time period. These two figures were used to compute the employee turnover percentage shown by the data in Table 9.

The highest employee turnover was in the fields that would require the least amount of education to enter -- that is, used car reconditioning men, 18.7 per cent; lubrication men, 18.2 per cent; and auto mechanic apprentices, 16.1 per cent. The lowest employee turnover was for air conditioning mechanics, 2.8 per cent, and tune-up specialists, 4.7 per cent, but these were based on a relatively small number of employees. The employee turnover percentage for general auto mechanics was 10.3.

Supply of Trained Workers

One of the sections of the questionnaire was for firms to indicate whether they felt there was a short, adequate, or surplus supply of trained workers in each of the job classifications. As an overview, a majority of the firms felt there was a shortage of trained workers, while very few firms felt there were actually a surplus of workers. About 60 per cent of those responding felt there was a shortage of general auto mechanics. This percentage is fairly representative of the other job classifications except radio men, lubrication men, service managers, and parts men. An adequate supply of workers was indicated for each of these classifications.

Additional Job Classifications

Several blank spaces were left at the end of the job classification section of the questionnaire. This provided a space for the respondents to add any job classifications

Table 8. Number of organized in-shop training programs operated by responding firms

Job classification	Merged areas																State total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	
Auto mechanic (general)	4	7	5	1	12	7	5	5	9	14	9	8	8	0	5	4	103
Auto mechanic apprentice	0	2	3	0	4	4	5	0	5	7	6	1	0	0	0	3	40
Truck mechanic	0	1	0	0	1	2	1	1	1	4	1	0	2	0	1	0	15
Tune-up specialist	0	2	1	0	0	1	0	0	2	7	1	1	1	0	0	0	16
Front-end alignment man	0	1	0	0	0	1	0	0	0	6	2	1	1	0	0	0	12
Used car reconditioning man	1	1	2	0	1	2	0	0	0	5	1	0	1	0	0	2	14
Auto body repairman	1	2	1	0	1	2	1	0	1	4	1	1	0	0	1	0	16
Transmission mechanic	0	1	0	0	0	1	0	0	2	4	2	0	1	0	0	0	11
Air conditioning mechanic	1	1	0	0	0	0	0	0	1	4	1	0	1	0	0	0	9
Radio man	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Lubrication man	0	1	2	2	3	0	0	0	1	7	2	1	1	0	1	0	21
Service manager	1	1	0	0	3	2	0	0	1	7	1	1	1	0	0	1	19
Parts man	1	1	2	0	4	1	1	0	3	8	4	0	1	0	0	1	27
Automobile salesman	0	1	3	0	6	4	2	0	1	8	3	3	5	0	1	2	39

Table 9. State-wide employee turnover percentage

Job classification	Total number on payroll December 1967 to December 1968	Number of employees lost December 1967 to December 1968	Turnover percentage
Auto mechanic (general)	2079	314	10.3
Auto mechanic apprentice	266	43	16.1
Truck mechanic	330	41	12.4
Tune-up specialist	149	7	4.7
Front-end alignment man	151	15	9.9
Used car reconditioning man	396	74	18.7
Auto body repairman	593	83	14.0
Transmission mechanic	154	19	12.3
Air conditioning mechanic	71	2	2.8
Radio man	4	0	0.0
Lubrication man	407	74	18.2
Service manager	387	43	11.1
Parts man	631	59	9.3
Automobile salesman	1235	147	11.9

they have in their firms that were not listed on the questionnaire. The data in Table 10 show these needs on a state-wide basis.

There were several implement dealers on the mailing list and part of their needs are expressed in the data in Table 10. For example, there were 26 tractor mechanics needed, 7 farm equipment set-up men needed, and 13 truck salesmen needed. There was a need for 16 accounting and office personnel listed for the state. One firm expressed the need for a man to do nothing but look for squeaks and rattles, trace electrical wiring, and make door adjustments.

Table 10. Needs for workers in classifications other than those listed on the questionnaire

Job classification	Employees needed on state-wide basis
Accounting and office personnel	16
Tractor mechanic	26
Delivery man	6
Service salesman	8
Farm equipment set-up man	7
Squeaks, rattles, wiring, and door adjustment man	1
Truck salesman	13
Radiator repairman	5
Service writer	2
Automotive machinist	8
Tower controller	1
Shop foreman	3
Janitor and wash boy	2
Auto trimmer and seamstress	5
Painter	8
Auto bumper reconditioner	3
Airplane mechanic	2

SUMMARY AND CONCLUSIONS

Of the 1031 service firms contacted, 791 of them returned their questionnaires for a return percentage of 76.7. Sixty-four of the questionnaires were not usable so the information in the study was based on 727 completed questionnaires.

Of the firms that responded, 80.8 per cent indicated they would hire graduates of area vocational schools while only 3.8 per cent indicated they would not.

In the general auto mechanics classification, the firms indicated they have 1945 employees presently and they would need 622 additional and replacement employees in 1969, 580 in 1970, and 512 in 1971. The next largest number of employees was needed in the classification of automobile salesmen where 1307 persons are employed and 272 additional and replacement employees are needed in 1969, 208 in 1970, and 178 in 1971. Personnel needs were also high in job classifications of auto body repairmen, used car reconditioning men, auto mechanic apprentices, truck mechanics, lubrication men, and parts men.

In additional training classes, the firms indicated a high degree of interest in classes in the electrical field where they indicated 639 employees should attend a class on using modern tune-up equipment, 587 employees should attend a class on electrical diagnosing, and 454 employees should attend a class on alternator servicing. Customer relations was a class the firms felt was important as they indicated 499 employees should attend it. Other classes ranked high by the firms were automatic transmission diagnosing and servicing, and automobile air conditioning servicing.

The in-shop training program that was operated most often by the firms was in the general auto mechanics classification. The in-shop training programs in the other classifications were operated only by the larger firms.

The highest employee turnover rates were for the job classifications that require the least amount of training -- that is, used car reconditioning men, 18.7 per cent; lubrication men, 18.2 per cent; and auto mechanic apprentices, 16.1 per cent. The employees in the general auto mechanic classification had a turnover rate of 10.3 per cent.

Most of the firms indicated a short supply of trained workers in most of the job classifications with the exception of lubrication men, service managers, parts men, and radio men where the supply was felt to be adequate.

As a reminder, it should be remembered that the results of this study are based on the returns of 727 usable questionnaires and do not represent the total needs of the state of Iowa for automotive service personnel.

As a result of this study, the following conclusions were drawn:

1. There is a definite need in the state of Iowa for well-trained automotive service personnel.

2. There is a definite need in the state of Iowa for additional part-time evening classes.

3. It was very difficult for firms to predict the number of additional employees needed beyond one year.

4. There is a need to consider both the general auto mechanic and the specialist in the training programs.

5. Area vocational school training programs in the automotive service industry should be maintained and extended.

MERGED AREAS MAP

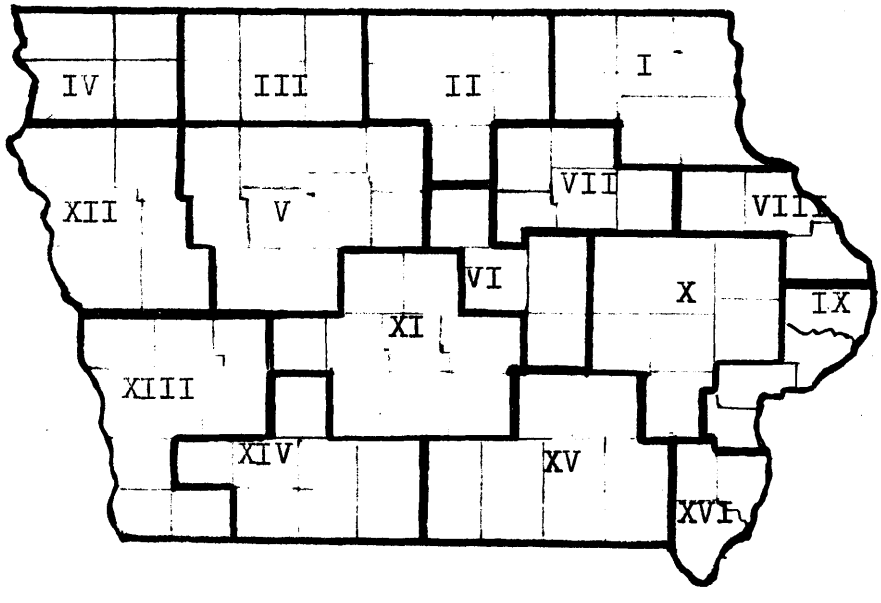
Administrative Centers of Area Schools in Iowa approved by the State Board of Public Instruction:

Area Community Colleges:

Area XI Ankeny
Area X Cedar Rapids
Area IX Bettendorf
Area V Fort Dodge
Area XVI Burlington
Area XIII Council Bluffs
Area XIV Creston
Area II Mason City
Area III Estherville
Area VI Marshalltown

Area Vocational Schools:

Area I Calmar
Area VII Waterloo
Area IV Sheldon
Area XII Sioux City
Area XV Ottumwa



For purposes of this study the state was divided into merged areas by county lines, as shown above, rather than by the actual boundary lines.