

ABSTRACT OF THESIS

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ENTRANCE REQUIREMENTS AND PROCEDURES  
USED IN TRADE SCHOOLS

Submitted by  
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In partial fulfillment of the requirements  
for the Degree of Master of Education  
Colorado  
Agricultural and Mechanical College  
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## ABSTRACT OF THESIS

This problem is limited to a study of entrance requirements and procedures now in use in 182 trade schools throughout the United States, with a recommendation to the Superintendent of the Arizona Vocational School, Phoenix, Arizona.

The problem arose through the difficulty experienced by the officials of the Arizona Vocational School of having large numbers of students quit school each year for various reasons. Through discussing this situation with directors of other trade schools, it was found that they were also experiencing similar problems and that they felt that the situation could be remedied considerably through the establishment of entrance requirements and procedures which would assist in admitting students who could and would profit from the training offered.

As a result of this need the problem of What entrance requirements and procedures are practiced in trade schools throughout the United States which meet Smith-Hughes standards and receive federal reimbursement, was evolved. An analysis of this major problem resulted in the following six minor points:

1. What general procedures are used for admission to trade schools and classes?
2. What personal characteristics are required for admission?
3. What scholastic attainment is required for entrance?
4. What tests are students required to take for admission to school?
5. What is the nature of guidance service rendered students?
6. What tuition and registration fees are charged students?

In order to secure answers to the above minor questions, it was first necessary to review the literature pertinent to the problem, and then to secure additional information from original sources, which were the directors of trade schools, supervisors of industrial education, and industrial teacher trainers throughout the country. Letters were sent to these educators asking them to submit questions, pertaining to entrance requirement and procedures to trade schools and classes, which they would like to have answered in a study of this nature. Personal contacts were made with many of these school officials. From these sources and from the needs experienced by the officials of the Arizona Vocational School, a

questionnaire was developed.

These questionnaires were sent to 286 trade school directors throughout the United States, and 182 of the directors responded. The data received from them were tabulated and analyzed, according to majority opinion of value and majority use. The following findings were considered as being of most importance:

Question 1.--"What general procedures are used for admission to trade schools and classes?"

- (1) Seventy-six per cent of the school directors reporting state that interest alone is not sufficient to allow a student to enter a trade class.
- (2) Only a few schools reporting require students to be recommended by trade or occupational committees.
- (3) A large majority of directors favor the approximation of school entrance requirements to those used by employers in the trade.
- (4) About one-half of the schools furnish all books and needed equipment to students.
- (5) Trade advisory committees are organized by one-half of the school directors reporting. They rate the use of such committees as of highest importance.
- (6) Slightly less than one-half of the school



directors reporting, limit the number of students in classes to employment possibilities. Over one-half of them favor this.

Question 2.--"What personal characteristics are required for admission?"

- (1) There is a general tendency to raise the entrance age requirement so that when students finish training they will be of an employable age. Entrance ages vary with the requirements of different trades.
- (2) One-half of the schools use some standard of personality as an entrance requirement. Almost all indicate the importance of appearance and personality characteristics but think that, with the exception of a few cases, these characteristics can be developed after employment.
- (3) A physical examination is indicated as one of the most important entrance requirements, and is being required by 81 per cent of the school directors reporting.
- (4) A majority of the directors report that high intelligence is necessary for success in trade training and that they require such for admission to their trade classes. There is a difference in opinion, however, as to

whether present academic tests measure the kind of intelligence necessary to success in mechanical trades.

Question 3.--"What scholastic attainment is required for entrance?"

- (1) The data collected indicate that graduation from grammar school, providing students are 14 years of age, might be established as a minimum entrance requirement.

Question 4.--"What tests are students required to take for admission to school?"

- (1) Entrance examinations and tests are required by 19 per cent of the directors reporting. A great variety of tests was used with varying degrees of success, including aptitude, mechanical, intelligence and personality types.

Question 5.--"What is the nature of guidance service rendered students?"

- (1) The data received point to the need for interviewing and counseling students before they are enrolled. The greatest number of directors favor the trade class instructor and the principal as being the ones who should interview and counsel new students.
- (2) Enrolling new students, on probation, was

approved by over one-half of the directors reporting.

- (3) The trade school should not include try-out courses unless there are adequate facilities.

Question 6.--"What tuition and registration fees are charged students?"

- (1) In 89 per cent of the schools there is no tuition or registration fee. In 11 per cent of the schools the fees vary from \$ .50 daily to \$250.00 per year.

#### Limitations

Certain limitations were found to impede this study, chief of which was that more detailed and complete results would have been obtained through personal visits to each of the 286 school directors to whom the questionnaires were sent.

#### Conclusions

Through the consideration and evaluation of the data received, the following conclusion is made: There is need for entrance requirements and procedures to trade schools and classes in order that effective instruction may be given the trainees which will assure them of a greater chance for success upon graduation and entrance upon employment.

T H E S I S

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In partial fulfillment of the requirements  
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SUPERVISION BY GEORGE S. SANDERS  
ENTITLED ENTRANCE REQUIREMENTS AND PROCEDURES  
USED IN TRADE SCHOOLS

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## Chapter I

### INTRODUCTION

During the operation of the Arizona Vocational School hundreds of persons terminated their trade training because of their inability to learn the trades taught, their misconception of trade instructional content and requirements, lack of educational background, lack of interest, lack of funds and lack of necessary personal characteristics. In some cases students were forced into school by well meaning parents and school officials. A few individuals enrolled and dropped out who were either too old or too young to profit from the instruction offered.

The efficiency of a trade school is largely judged by the quality of its graduates in terms of their ability to secure jobs, hold them and advance in their work. It is obviously important and necessary that students entering such a school be able to profit from the instruction given and meet the various requirements of the trades for which they are to be trained.

A certain amount of knowledge and skill is required of all who are accepted in industrial employment. It is increasingly difficult to secure work in

the skilled trades without training or experience because industry is primarily organized upon a money-making basis. Inefficient workers are quickly eliminated, since employers do not have to keep them. Competition between employers is very keen; consequently, they are inclined to employ only persons who are qualified in every way. It therefore seems important for trade school officials to establish standards of admission which will result in the selection of students who can be trained successfully for specific occupations.

The establishment of admission requirements to public schools is not a new procedure. In most instances those who enter high school must be graduates of elementary schools and those admitted to universities and colleges must be graduates of accredited high schools or must successfully pass entrance examinations. For admission to certain college courses additional special requirements must often be met.

Inasmuch as trade schools are organized to provide specific occupational training, it logically follows that effective admission requirements and procedures should be established.

The problem of admission requirements and procedures has been discussed with many trade school principals. Almost all agree that there should be careful selection of students for trade classes, yet

they differ in their ideas of requirements and procedures. In many cases, because of lack of information or knowledge of what to do, they simply follow the local minimum age requirements and rely upon the students' interest. In other cases they use shop try-out procedures and take into their schools those who meet the minimum requirements which are established by the United States Office of Education for reimbursable trade classes.

The interest of the many persons with whom this study was discussed, and the hearty response received from those who were asked to take part in it, indicates that a study of the type involved in this thesis is not only timely and needed, but that it will be of help to the superintendent of the Arizona Vocational School as well as to other trade school officials in the country.

#### Statement of the problem:

The problem involved in this study is to secure data in answer to the following major question, and from the analysis and evaluation of these data to make recommendations to the Superintendent of the Arizona Vocational School. The major question is: What entrance requirements and procedures are practiced in those trade schools throughout the United States which meet Smith-Hughes standards and receive federal

reimbursement?

Analysis of the problem.--An analysis of the major question given above results in the following minor questions:

1. What general procedures are used for admission to trade schools and classes?
2. What personal characteristics are required for admission?
3. What scholastic attainment is required for entrance?
4. What tests are students required to take for admission to school?
5. What is the nature of guidance service rendered students?
6. What tuition and registration fees are charged students?

Delimitation of the problem.--1. The scope of this study will cover the entrance procedures and requirements of 182 representative trade schools in the United States.

2. The terms entrance requirements and procedures will refer to policies adopted and used by school officials to govern the admission of students to trade schools and classes.



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3. The terms trade schools and classes will be used to refer to all trade, industrial and vocational schools and classes which meet Smith-Hughes federal requirements and which are primarily organized to prepare persons for entrance into specific trades and occupations.
  4. This study is limited to the pre-war period prior to December 7, 1941.

It is assumed that the results of this study will be helpful and informative in a number of ways, some of which are the following:

1. It should be interesting and helpful to school officials to receive definite and authentic information concerning this subject from persons who are daily confronted with these problems.
2. It should provide helpful information to school directors concerning methods used in other trade schools and should enable them to improve their own procedures.
3. It should be helpful to school administrators to know the attitudes and opinions of other school administrators towards problems of school entrance requirements.



4. It should be helpful in supplying information on successful and unsuccessful procedures which have been tried, as well as those which have been retained and are now in use.
5. It should stimulate school officials who are not paying much attention to the admission of students to give careful and adequate consideration to this problem.
6. Inasmuch as this study has been confined to the period before our country entered World War II, it should provide an incentive for a later study to determine the extent to which the war and the war production training may have influenced entrance requirements and procedures of trade schools and classes.
7. The data and recommendations contained in this study should be of aid to directors of new trade schools which may be organized in the future.
8. This study should be helpful in influencing and improving training conditions for our youth in the future.

By securing data in answer to the six minor questions listed in the analysis of the problem, the

major question was answered. Partial answers to the questions were obtained through the review of literature which follows in Chapter II.

## Chapter II

### REVIEW OF LITERATURE

A review of numerous references and articles dealing with the subject of guidance and student selection indicated that in secondary and higher education a great deal of importance is attached to student selection, as well as to the selection of instructors. Much has been written on guidance as a means of selection through influencing students' choices of occupational training. Limited study has also been made of the selection of persons for employment by industrial concerns.

Only one research study was found which had a partial direct bearing on the subject of this study. This was a thesis by Whitesell (12) part of which dealt with the entrance requirements and procedures developed and used in ten cities in the United States to admit students to trade schools and classes.

The United States Office of Education, in its policy bulletin (9:47), establishes certain requirements which must be met if federal reimbursement is to be received for the operation of trade schools and classes. These policies and requirements are as

follows:

While the minimum age of 14 is the only age requirement in the Vocational Education Acts, the actual age of entrance upon a vocational training program should be regulated locally at the minimum or at such a point above this minimum as will insure that those completing the training will be mature enough to be accepted as workers in the occupation. Admission should be restricted to those who are physically and mentally competent to do the work and who possess the qualifications required for employment in the type of work for which the training is offered. Interest in the trade and ability to do the work should be the determining factors even after admission. A probationary period of attendance for this purpose will enable the school to determine students' real ability. While communities maintaining all-day vocational schools should offer opportunities for vocational education to all youths meeting minimum requirements who need and can profit from the instruction, care must be exercised to prevent training too many in any particular field of work.

The quotation cited above assists in this study in the following manner:

1. It establishes the minimum entrance age at 14 years.
2. It makes it necessary for those admitted to classes to meet the qualifications required for employment in the trade for which they are being trained.
3. It requires those admitted to classes to be both mentally and physically competent to profit from the instruction offered.
4. It advises raising the entrance age when deemed necessary to meet employment conditions.
5. It advises the establishment of probationary periods in school in order to determine students' abilities to profit from the instruction offered.

6. It advises against training too many in any one field.

Wright and Allen (13:49) in their book, Efficiency in Vocational Education, have listed a number of situations and procedures in selecting students for trade classes and have rated them according to their opinions. The ones they feel are of least value and which they have given a rating value of "0" are:

1. Chronological age.
2. Intelligent quotient.
3. Graduation from the elementary school.
4. Automatic admission and promotion based on academic standards.

The procedure they rate as being the best of those considered is a combination of four:

1. On request of pupil, and
2. Personal interview by principal, and
3. Recommendation of occupational committee, and
4. Request of pupil and parent.

The above conclusions by Wright and Allen contribute to the minor question number one through contributing opinions regarding effective entrance procedures based upon many years of experience in trade training.

Cox, (5:80) in his study of fundamental employment characteristics, gives the following in

regard to devices used in employee selection:

Selection Methods or Extent to Which Various  
Devices are Used in Employee Selections.

According to the data compiled, the "oral interview" ranks first as a selection device, there having been 95 advanced, 90 non-advanced and 91 separated cases hired by this method. "Trade tests applied" ranked second with 17 advanced, 20 non-advanced and 14 separated cases while "trade tests written" ranked third with 9 advanced, 9 non-advanced, and 5 separated cases. "Aptitude tests" ranked fourth and lowest with 9 advanced, 10 non-advanced, and 2 separated cases. In many of the cases, both oral interview and tests were given; this explains why the columns total more than one hundred cases.

Table No. 16 --SELECTION METHODS OR EXTENT TO WHICH VARIOUS DEVICES ARE USED IN EMPLOYEE SELECTION (AS COMPILED FROM 100 ADVANCED, 100 NON-ADVANCED AND 100 SEPARATED CASES)

Methods of Selection	Adv.	Non-adv.	Sep.
Oral interview only----	95	90	91
Trade Tests, written----	9	9	5
Trade Tests, applied----	17	20	14
Aptitude Tests-----	9	10	2
Total	130	129	112

While the above information obtained by Cox pertains only to the metal trades in the San Francisco Bay Area and shows the results of employer effort to secure satisfactory employees, it does have some bearing on this study of trade school entrance requirements and procedures, inasmuch as it indicates the interest of employers in securing properly qualified



employees. It partially answers minor questions 1 and 4. It also shows the apparent emphasis these employers place on the different devices mentioned. Various reasons might be attributed to their failure to utilize other selection devices. Their choice of devices should, however, indicate the desirability of experimenting with these particular ones in the selection of students for trade classes.

Cox (5:84-87) further shows the opinions of employers on various personal characteristics pertaining to employee advancement and non-advancement as indicated below and shown in exhibits 3 and 4, appendix.

Personal Characteristics and Their  
Values in Relation to employee Advancement

The first nine items, "Adaptability to Job", "Adaptability to Environment", "Application", "Progress", "Punctuality", "Production Speed", "Conduct-Job", "Conduct-Social", "Thrift (Employer)", all rated one hundred per cent. "Personality", "Cooperation", "Capability", "Thoroughness", "Accuracy", "Reliability", "Judgement-Job", "Job-Social", "Job Interest", "Honesty", "Neatness-Personal", rated ninety-nine per cent. "Initiative", "Versatility", "Physical (health)", and "Promotional Material" rated ninety-seven per cent; "Appreciation" rated ninety-four per cent; "Tactfulness", "Leadership" and "Flexibility" rated ninety-two per cent; "Courage", eighty-seven per cent; "Creative Ability", eighty-five per cent; and "Being a Student While Employed" rated eighty-one per cent.

The personal characteristics in Table 21 are arranged in the order of their importance and are self explanatory. It will be noted, however, that the items carrying the highest percentage are: "Courteousness", "Production Speed", "Conduct-Job", and "Thoroughness". The other



personal characteristics are self explanatory and are placed in the order of their importance, according to the employer. Attention is also called to the items which this particular type of employee rates the lowest, namely, "Creative Ability", "Student While Employed" and "Leadership". (Exhibit 4, Appendix)

While Cox's Charts, Numbers 20 and 21, shown in exhibits 3 and 4, appendix, do not bear directly upon the subject of this thesis, they do indicate some of the traits and characteristics which might be observed and made a part of a students' high school records before he seeks entrance to a trade school. This study partially answers minor question number 2.

Cox (5:24) quotes Cleeton (4) as referring to a study (5:25), made by John W. Brewer of Harvard University, pertaining to the loss of jobs due to personal characteristics as compared with lack of skill or ability to do the job. Brewer found that 62.4 per cent of 4174 cases of discharged employees had lost their jobs because of "personal characteristics" such as insubordination, unreliability and absenteeism. In this study Brewer found that only 34.2 per cent of this same number lost jobs because of lack of skill or ability to do the job.

The study, discussed above, contributes to the present investigation because it indicates the need and importance for attention being directed to

the consideration of personal characteristics of students in admitting them to trade classes where they will be trained for specific jobs. It partially answers minor question number two.

Bartlow (1) recommends admission to vocational classes upon the basis of selection. This recommendation contributes to and partially answers the minor questions Nos. 1, 2, 3 and 4.

Van Oot (11) made a study

. . .to devise a method of selection for apprenticeship in a group of nineteen trades allied to shipbuilding candidates of optimum qualifications for training in order that reasonable assurance may be had that those who are selected will function effectively in the respective trades into which they are entered, thus reducing apprenticeship turn-over,

This study differs from the present one inasmuch as it is concerned with employees and is confined to occupations in a shipyard.

Van Oot tried to find out if the tests and criteria used by the shipbuilding company for the selection of apprentices were of any value. He found that they were not. The table of correlations, as compiled, shows that such traits as measured by the Otis Intelligence Test, the O'Connor Wiggly Block Test, The Minnesota Paper Form Board Test and the Thurstone Personality Schedule Test, and such factors as the age

of the student above sixteen and the amount of formal education have no relationship to actual mechanical ability, as measured by standard performance of skilled mechanics. Van Oot's conclusions are:

1. That even though the method of combining scores according to percentile rank gives some promise of success, this method does not necessarily say that the traits which are used are traits which should be stressed in the selection of apprentices.
2. Even though it is realized that general intelligence and mechanical aptitude (as measured by the tests employed in this study), age, and amount of school preparation contribute but slightly toward mechanical ability, yet these traits, when unweighted and combined into a complete score by use of percentile ranks, probably have some value as a means of selecting apprentices. They are probably not much more valuable than any other sets of traits would be, but the scores of the apprentices in this study suggest that these traits, treated by the method of percentile ranks, may be used advisedly in the selection of apprentices in this industry.
3. The evidence in this study does not show that general intelligence, mechanical aptitude and personality are not factors necessary for success in the mechanical trades. It shows that the standard tests which are used in the field of general education do not measure the kinds of intelligence, mechanical aptitude and personality which are necessary for success in the mechanical trades.

Van Oot's study is related to the present research inasmuch as the means of selection for apprentices who will be given training after employment parallels somewhat those of the selection of students to learn occupations in a trade school and to meet

employers' requirements. This study partially answers the minor questions 2 and 4.

Graves (6:22-23) in his study to set up a program for the selection of apprentices for industry in Birmingham, Alabama, limited his research to six of the 13 trades taught in the Paul Hayne School. He made a survey of 59 industries in Birmingham (6:25) relative to their employment policies concerning the qualifications required of apprentices and methods used to select apprentices.

This information was obtained from the companies' foremen through the use of a questionnaire. The questionnaire was answered by 97 persons. It was felt that the foremen under whom the workers work were best able to give authentic information. Graves (6:10) endeavored to find the answers to the following:

1. Whether or not Birmingham industries have evolved any reliable methods of selecting apprentices.
2. What the methods of selection are.
3. The adaptability of these methods of selection to students applying for trade training in the Paul Hayne Vocational School.

Based upon the findings of this study the following recommendations were made: (6:81)

Summary of recommended plan for  
selecting students

On the basis of the findings gained from a study of the selection of apprentices in

industry in Birmingham, the following criteria are recommended for selecting boys for trade courses in the Paul Hayne School:

1. The minimum age of 16 years should be required of all new students, so that, upon graduation, they will meet the age preference in industry of 18 years.
2. A minimum of two years' regular academic high school training should be required. Upon completion of a vocational course, students would receive a high school diploma, thus fulfilling the popular demand for high school graduation.
3. All vocational students, before being officially enrolled, should be given a physical examination by school doctors.
4. The first semester in a trade class should be accepted by students, parents and teachers alike, as a try-out period. At the end of that period students lacking interest and ability should be transferred to other courses.
5. More effort should be made by vocational counsellors, teachers and curriculum committees to integrate the vocational courses with regular high school work. Such management would probably interest more capable students in trade courses.

The above study as summarized by Graves contributes to and partially answers minor questions 1 and 3.

Clark (3) in his study "Methods for Selecting Boys for Vocational Classes Best Suited to Their Interests and Aptitudes", sent a questionnaire to the directors of 47 Wisconsin Vocational Schools.



Part One of this questionnaire contains a list of counseling aids to be checked by the school directors as to which methods they are using and their evaluation of each. Part Two consists of a list of questions pertaining to guidance and selection which are to be answered by either "yes" or "no", according to opinion. Part Three consists of a request for the names of commercial and personally made tests used in guidance and counseling. Part Four asks for suggestions regarding improvement for making the study more complete, useable and useful. It also asks for the names of guidance counselors who are using modern guidance methods.

Some of the data (3:22-49) summarized under numbered headings as they appear in Part One of Clark's study, and applying to the present research, are as follows:

Part One of Clark's questionnaire. (Only the headings are quoted. Percentages are given in whole numbers.)

1. Try-out or trade-finding courses in school.

A total of 89 per cent of the directors use this aid. Of these, 82 per cent gave it a high rating value, 9 per cent rated it medium value and none rated it low value. None of the 11 per cent of the directors who do not use this aid evaluated it.

2. Previous shop records from junior or senior high school or other vocational school.

A total of 78 per cent of the directors

use this aid. Of these, 30 per cent rated it high as an aid, 50 per cent rated it of medium value and 4 per cent rated it low. Of those who use it, 7 per cent did not give it a value or rating.

A total of 22 per cent do not use it. Of these, 63 per cent gave it no rating, 22 per cent rated it medium value as an aid and none gave it a low value.

4. A pupil's occupational choice.

A total of 75 per cent of the directors reported using this aid. Of these 59 per cent rated its value high, 22 per cent gave it a medium value rating and none rated it low. Of those who use this aid, 19 per cent did not rate it.

A total of 25 per cent do not use this aid. Of these, 56 per cent did not rate it, 11 per cent who do not use this aid rated it of medium value and 22 per cent rated it low. One director stated that in his opinion its value is high if well founded.

5. A boy's previous day school academic record.

A total of 75 per cent of the Wisconsin directors use academic school records as an aid. Of these, 34 per cent who use it evaluated it high, 46 per cent gave it a medium value rating and 12 per cent rated it low. Of those who use it, 8 per cent failed to rate it.

A total of 28 per cent of the directors reported not using this aid. Of these, 27 per cent rated it of medium value, 9 per cent gave it a low rating and 64 per cent stated that in their opinions it had no value to them.

6. An analysis of job requirements to compare with his mental traits and physical abilities.

A total of 70 per cent of the directors use this aid. Of these, 84 per cent



rated it of high value, 8 per cent gave it a medium value rating and none rated it low.

A total of 30 per cent of the Wisconsin directors do not use this aid. Of these, 55 per cent did not rate it, 36 per cent rated it of high value, 9 per cent gave it a medium value rating and none rated it low.

7. The intelligence quotient as a counseling aid.

A total of 64 per cent use this counseling aid. Of these, 44 per cent rate it of high value, 48 per cent gave it a medium value rating and 4 per cent rated it low.

A total of 36 per cent do not use this aid in guidance work. Of these, 58 failed to check its value, 16 per cent gave it a high rating, 8 per cent rated it of medium value and 8 per cent rated it low. One director stated that it is of medium to high value as a counseling aid.

11. A physical record as a counseling aid.

A total of 59 per cent of the directors use this aid. Of these, 63 per cent rated it of high value, 19 per cent rated it of medium value as an aid, 9 per cent did not give it a rating value.

A total of 41 per cent of the directors do not use this aid. Of these, 73 per cent gave it no rating, 7 per cent rated it high, 20 per cent rated it of medium value. One director qualified his rating of this aid by stating that in some kinds of work its value would be high.

15. Personality tests as a guidance aid.

A total of 42 per cent of the Wisconsin directors use this aid. Of these, 33 per cent rated it of high value, 47 per cent gave it a medium value rating, 13 per cent rated it low and 7 per cent did not evaluate it.

A total of 58 per cent do not use this as a guidance aid. Of these, 66 per cent did not rate it, 14 per cent rated it high, 14 per cent gave it a medium value rating and 6 per cent rated it low in value as an aid.

21. Give short mechanical performance tests as a requirement before a boy chooses a vocation.

A total of 30 per cent of the directors use this aid. Of these, 64 per cent rated it of high value, 27 per cent rated it of medium value, none rated it low and 9 per cent did not evaluate it.

A total of 70 per cent do not use this aid. Of these, 76 per cent did not evaluate it, 12 per cent rated its use high, 8 per cent gave it a medium value rating and 4 per cent rated it low.

22. The Otis Self-Administering Test for general intelligence.

A total of 30 per cent of the directors use this aid. Of these, 55 per cent rated it of high value, 27 per cent rated it of medium value, 9 per cent gave it a low value rating and 9 per cent did not evaluate it.

A total of 70 per cent of the directors do not use this aid. Of these, 96 per cent did not evaluate it, 4 per cent rated it high. One director stated that he uses the Henman-Nelson California test of mental maturity instead of the Otis and rated this test high in value as an aid to counseling.

29. Stenquist's Test of Mechanical Ability 1, as a guidance aid.

A total of 17 per cent of the directors use this aid. Of these, 34 per cent rated it high in value, 33 per cent gave it a medium value rating and 33 per cent rated it low in value.

A total of 83 per cent of the directors do not use this aid. Of these, 90 per cent did not evaluate it, none valued it highly, 7 per cent rated it of medium value. One director uses Miller's Interest Test instead

of the Stenquist.

30. The Detroit Mechanical Aptitude Examination for boys.

A total of 17 per cent of the directors use this test. Of these, 50 per cent rate it high, 33 per cent rate it of medium value and 17 per cent rate it low.

A total of 83 per cent of the directors do not use it. Of these, none evaluated it. One director stated that he could not give an opinion as he was not acquainted with the test.

31. The Minnesota Form Board Tests A and B as a guidance aid.

A total of 14 per cent of the directors use this aid. Of these, 40 per cent rate it of high value, 40 per cent rate it of medium value and 20 per cent gave it a low rating.

A total of 86 per cent of the directors do not use this aid. Of these, 92 per cent did not evaluate it, 4 per cent rated it high, 4 per cent rated it of medium value and none rated it low. Two directors commented on this test; one who used it stated that "the tests" were highly valuable, while the other stated that he wanted to know more about them before giving his opinions.

32. Stenquists' Test of Mechanical Ability II, as a counseling aid.

A total of 8 per cent of the directors use this aid. Of these, 33 per cent rated it of high value and 67 per cent rated it low in value.

A total of 92 per cent of the directors do not use this aid. Of these, 88 per cent did not evaluate it, 9 per cent rated it high and 3 per cent gave it a low value rating. One director wanted to know more about this test before giving his opinion concerning its value.

34. The Minnesota Spatial Relations Test as a guidance aid.

A total of 6 per cent of the directors use this aid. Of these 50 per cent rated it of medium value and 50 per cent did not evaluate it.

A total of 94 per cent of the Wisconsin directors do not use this aid. Of these, 88 per cent did not evaluate it, 6 per cent rated it of high value and 6 per cent gave it a medium value rating. One director wrote on his questionnaire "highly valuable". Another wrote that he wanted to know more about the test before expressing his opinion about it.

35. Stenquist's Assembly Test for Mechanical Ability as a guidance aid.

A total of 5 per cent of the directors use this aid. Of these, 50 per cent rated it of high value and 50 per cent rated it of low value.

A total of 95 per cent of the directors do not use this aid. Of these, 88 per cent did not evaluate it, 9 per cent rated it of medium value and 3 per cent rated it low. One director wanted to know more about the test before rating it.

36. Minnesota Assembly Tests used as a guidance aid.

A total of 3 per cent of the directors use this aid. Of these, all rate it of high value.

A total of 97 per cent do not use this aid. Of these 6 per cent rate it of high value as a counseling aid. One director who does not use it wrote "highly valuable".

37. The McQuarrie Test for Mechanical Ability as an aid.

A total of 3 per cent of the directors use this aid and none evaluated it.

A total of 97 per cent of the Wisconsin directors do not use this aid. Of these, 3 per cent rated its use of high value, 6 per cent rated it of medium value and 91

per cent did not rate it.

Part Two of Clark's questionnaire. (only the numbered headings are quoted)

1. Should an academic record come from the Junior High School or Senior High School, with a student's ratings, to your school?

Thirty directors desired such a record. Four directors did not feel the need for such a record. Two directors did not answer the question.

5. In the directors' experience, do boys of high intelligence quotient succeed more readily in vocational courses than pupils with low score?

Twenty seven directors thought so. Six directors did not think so.

16. Should vocational educators concern themselves with the proper selection of students for training?

Thirty directors thought that they should. Four did not think so.

18. Is there need for guidance to deter a boy from entering training for which he has little or no apparent aptitude?

Thirty directors stated that in their opinions there is a need. None of them gave a negative answer.

20. Would a battery of records, tests, charts and rating scales help in the selection of boys for vocational courses, with a better chance of ultimate success in an occupation?

Twenty one directors checked this question "Yes". Six checked the question "No".

Clark (3:61) concludes his study on "Methods of Selecting Boys for Vocational Classes Best Suited to Their Interests and Aptitudes" with the following statements:



The writer recommends that a counselor use a battery of records and tests over a period of years in order to prove that it will, or will not, materially aid in the selection of a boy for a job.

It is recommended that men, experienced in the building of tests, be subsidized, perhaps by the State Board, to perfect tests to be used in the fields named in this study. The purpose would be to so design the tests, that they would narrow the field of vocational direction and point toward a single vocation and would thus facilitate the work of the counselor and speed the training of the student.

Clark devotes his efforts mainly to the problem of guidance. However, his research contributes to the present study inasmuch as a number of items listed in his questionnaire, and the response requested from school directors for certain information as to their use and value, parallels that of certain items in the questionnaire used in the present study.

Clark's study differs from that of the present research as he approaches the problem of student selection from the guidance angle and deals with guidance prior to admission to classes, while the subject of the present research is to determine the procedures and entrance requirements now being used by trade school officials and their evaluation of them. Some of the information and data secured by Clark on the use and value of tests, the personal characteristics, academic accomplishments, physical and mental condition, and scholastic record of students, as aids in



selecting students for trade classes and in establishing entrance requirements and procedure to trade classes, partially answers the minor questions Nos. 1, 2, 3, 4, and 5 of the present study.

The value of tests as an aid to selecting students for trade classes was studied by Kent (7). This study, according to a report by Clark, was conducted with 157 pupils over a period of five years. Preliminary testing showed that 63 per cent were better than average mechanically. Sixty-eight of this 157 had been rated "plus" because their test record scores indicated better than average chances for success. Forty-four were rated "plus and minus", indicating even chances for success, and the remaining 45 of the 157 were classed as possible failures.

The results of this study showed that of the 68 "plus" ratings, 14 failed and 54 graduated. This was a 79 per cent agreement with the tests. There was a 90 per cent agreement with the tests with the "plus and minus" group. Of this group of 44, those graduating were 20 and 24 failed. Of the 45 "minus" ratings or possible failure group, 12 graduated and 33 failed. This was a 73 per cent agreement with the tests.

Kent's conclusions were that the tests used did not measure all the factors influencing success or

failure, but did, however, give a 78 per cent prediction of those studied. He also states that only trained and experienced persons should be used to conduct such a study with boys, and to take the responsibility for the conclusions which may be reached, and that research is necessary, in addition to various tests, to enable one to arrive at any definite conclusions for a boy, starting in a certain vocational direction. The tests which he used were:

Stenquist's Test for Mechanical Ability I and II  
 Stenquist's Test for Mechanical Ability Assembly  
 Otis Self-Administering Test for General  
 Intelligence  
 MacQuarrie Test for Mechanical Ability

Kent's study adds to the present research by contributing data which partially answer the minor question number 4.

Kitson (8) emphasizes the need for selection of students for trade training in his magazine article "Does Mechanical Aptitude Exist?" He states:

One of the concepts frequently associated with vocational guidance and vocational selection is mechanical aptitude. Certain individuals seem to adapt themselves readily to occupational activities requiring mechanical and manipulation while others find difficulty in making such adaptations. The explanation is usually offered that there must be some mysterious thing called mechanical aptitude which some people have and others do not.

Brewer (2) in another magazine article makes the following statement relative to the use of tests predicting success in work or for training for occupa-

tions.

Tests are being developed to estimate the probability of success in various kinds of work; rating scales and marks in school studies and in exploratory courses are also valuable aids.

These studies concerning tests indicate that something might be done through testing students prior to their entering a trade school, to determine their adaptability, and the suitability of their learning certain occupations. They also indicate that there is still a great deal to learn about tests and testing, and that other elements need to be considered when selecting students for trade classes. The statements by Kitson and Kent supply partial answers to the minor question number 4 of the present study.

A study by Whitesell (12) of the vocational school programs in ten cities of the United States contains enrollment and entrance requirements to the vocational schools in the following school systems:

Birmingham, Alabama	Essex County, New Jersey
Baltimore, Maryland	Los Angeles, California
Buffalo, New York	Milwaukee, Wisconsin
Cincinnati, Ohio	New York City, New York
Connecticut Trade	St. Louis, Missouri
Schools	

This study is concerned with various elements of the whole vocational school program in each of the cities and school systems mentioned, such as (12:2):

The Community (occupational information)  
Administrative organization of the vocational  
schools  
Enrollment and entrance requirements  
Organization of instruction  
Vocational courses offered  
Placement

These items are dealt with in a narrative manner, with a listing of courses of study and trades and occupations taught. There are no charts, tables or comparative data. Each school or school system is dealt with separately. The purpose of the study is stated as follows (12:1):

----the specific problems undertaken therefore were to determine in some detail, (1) the plan of administrative organization and the program of offerings in each of the schools included in this study, and (2) to find implications, from an interpretation of the comparative information, that might serve in some measure as a guide to other cities in selecting courses and in planning for their administration.

The summary of findings and implications which Whitesell makes in regard to entrance requirements to trade schools are as follows (12:115):

Entrance requirements in the vocational schools examined vary in different cities and with different trades. There are no school systems that allow students to enroll in vocational classes under 14 years of age, and who have not finished the eighth grade.

All schools require the student to be normal, mentally, morally and physically, to profit from the training offered. It is a waste of money to offer boys and girls training in trades in which it is definitely known that they cannot be successful.

The age at which young people enter industry has been on the upward trend in the last

decade. Today it is almost impossible to place a boy or girl under 18 or 19 years of age. For some occupations the age limit is higher. It is therefore unfair to the student to graduate him before he is old enough to be placed on the job for which he is trained.

Whitesell's research aids the present study by contributing to and partially answering the minor questions number 1, 2, and 3.

In addition to the studies and articles mentioned in this chapter of the review of literature, other references, which from their titles might be expected to provide helpful data for this study, were searched for material. While these additional references did not supply usable material, they were helpful in providing a background in guidance and in substantiating the need for better selection of students for trade training. Such additional references are for this reason included in the bibliography, but are not mentioned nor discussed in this study.

Summing up the content of the literature reviewed on this subject, it will be observed that none of the studies or writings deals specifically and in sufficient detail with the problem considered in this study, yet some element of the study is treated to some extent in each report. Partial answers were found to the minor questions 1, 2, 3, and 4. Minor question 5 was not answered specifically and no information was supplied in answer to question 6.

Despite the scope of the studies reviewed, the scientific research they represent and the recognized authority of the authors, there is still need for additional information to answer more fully all of the subordinate questions of this research study.

The materials and methods used to secure the additional data needed are found in Chapter III.



### Chapter III

#### MATERIALS AND METHODS

Information that might lead to answers to the six minor questions involved in this study of entrance requirements and procedures to trade schools was sought in reports and studies on this subject and presented in Chapter II. Since only partial answers were secured by this means, it was necessary to secure additional data from original sources, through interviews with the directors of trade schools.

#### Source of materials

The additional sources of data were obtained as follows:

1. Trade school directors throughout the United States.
2. Supervisors of industrial education in various parts of the country.
3. Industrial teacher trainers from a number of state departments of Vocational Education.

Validity of these sources of information is assured because the persons supplying the data are those who are in control or supervise the trade schools from which the problem of this study originates. They are original sources and are dealing daily with the situations and details of this problem.

Methods, devices and techniques  
used in making this study.

The review of literature gave partial answers to the minor questions 1, 2, 3, and 4 of this study. The following methods, devices and techniques were applied to the above mentioned sources to secure the additional information needed to answer all six minor questions.

Step I. Personal contacts.--The problem of entrance requirements and procedures was discussed with numerous trade school directors, supervisors of industrial education and industrial teacher trainers during two summer school sessions at the Colorado Agricultural and Mechanical College, Fort Collins, Colorado, and at the University of Washington, Seattle, Washington. Various officials in the United States Office of Education, Washington, D.C., were also interviewed.

Other opportunities for discussing this problem with additional persons engaged in trade and industrial education were presented during two of the yearly conventions of the American Vocational Association.

Special meetings were conducted with the teachers and the superintendent of the Arizona Vocational School, Phoenix, Arizona, and at these meetings the problem of entrance requirements and procedures to the school was discussed in detail.

Many of the questions and statements secured through these contacts were helpful in forming the questionnaire used in securing data for this study.

Step II. Securing additional data for this study.--A form letter (Form I. Appendix) was first sent to all state directors of vocational education, and to a group of trade school directors, stating the purpose of the proposed study and asking for their cooperation in listing the things that they would like to know about entrance requirements and procedures for entering trade schools. They were also asked for the names and addresses of trade schools in their states so that the directors of these schools might be contacted for data for this study.

Step III. Determining the method best suited for this study.--After discussions with the head of the industrial education department and the supervisor of research in education of the Colorado Agricultural and Mechanical College, as to methods and devices which might be most effectively used to secure data for this study, it was agreed that the questionnaire method was the most practical one. Limitations in regard to the use of the questionnaire were recognized and taken into consideration, but because of the large number of trade schools in the country which might be considered in this study, and their locations, such a device was

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determined upon as being most practical and suitable.

Step IV. Organizing the questionnaire.--From the replies to the letters mentioned in Step II, and from information secured through discussing the problem with persons mentioned in Step I, a questionnaire, consisting of two parts, (Form 2, Appendix) was developed. It contains questions and statements concerning the problems and items of most concern to the above mentioned educators. This questionnaire was discussed with the Superintendent and instructors of the Arizona Vocational School, with some directors of trade schools, with a few state supervisors of trade and industrial education and with the head of the Industrial Education Division and the Supervisor of Research in Education of the Colorado Agricultural and Mechanical College. A number of suggestions and changes were made in its form and content, resulting in its approval by the college officials in its present form.

The questionnaire consists of two parts. The first part contains statements and questions concerning conformity to Smith-Hughes standards and receipt of federal funds. The following directions were included for guidance to those answering it:

Please check each statement in the spaces provided at the left.

Yes - If you use the procedure now, check in this

- space.
- No - If you do not use the procedure now, check in this space.
  - A - If you have used the procedure but are not using it now, write in column A the number of years you used it before discarding it.
  - B - If you are using the procedure now, write in column B the number of years you have used it.
  - C - In column C, rate all procedures. Rate from the numeral ten for those you consider of least value, up to the numeral 1 for those you consider of greatest value.

If you use other procedures or requirements, list them in the blank spaces.

The first division in Part I of the questionnaire contains 11 statements pertaining to general entrance procedures; the second division contains 10 statements pertaining to student personal characteristics; the third division has in it seven statements concerning scholastic attainment of students; the fourth division consists of five statements on test; the fifth division, with five statements, is concerned with guidance, and the sixth division has in it six statements on tuition and registration fees. These divisions correspond to the six minor questions in the problem analysis, and were designed to secure data in answer to those questions.

Part II of the questionnaire is concerned mainly with opinions and explanations. In it are 14 statements of a miscellaneous nature pertaining to entrance procedures and requirements, with the following instructions to those who are to fill it out:



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"Please answer the following questions briefly. If necessary, use back of paper or another sheet."

Two additional questions were asked, which, although not designed specifically to answer any of the six minor questions, do contribute to the general nature of this study.

Step V.--Selection of trade schools.--From the replies received to the letters mentioned in Step II, and from the "Directory of Federally Aided All-Day Trade and Industrial Education Programs", (5), a representative list of 286 trade schools was selected, including schools from every state in the Union and the District of Columbia. The questionnaire, with an accompanying letter (Form 3, Appendix) asking for cooperation in filling it, was sent to each of the directors of these schools.

Step VI. Findings and their interpretation.--Data received from the questionnaires returned by 182 of the 286 trade school directors (Exhibit I. Appendix) to whom the questionnaires were sent, were tabulated. From all analysis and interpretation of these data, answers to the problem of this study were obtained. The data were compiled in the following tables:

Table I. Number and spread of questionnaire respondents.

Table 2. States excluded from the study because of the lack of replies to questionnaires.



- Table 3. General procedures for admission to trade schools.
- Table 4. Required personal characteristics.
- Table 5. Scholastic attainment required for entrance.
- Table 6. Tests which students are required to take for admission.
- Table 7. Guidance service rendered students.
- Table 8. Tuition and required fees charged.
- Table 9. Tuition and required fees charged. (Break-down from outside the school district.)
- Table 10. Trades taught in schools responding to the questionnaire.
- Table 11. Student registration.
- Table 12. Provisions for assisting needy students.
- Table 13. Extent of physical examinations.
- Table 14. Conduction of physical examinations.
- Table 15. Responsibility for costs of physical examinations.
- Table 16. Frequency of physical examinations.
- Table 17. Trades taught and tests used.

Step VII. Criteria to evaluate questionnaire data.--The data obtained by use of the questionnaire were of two types:

1. That of a factual or objective nature.
2. Information regarding opinions and explanations which are of a subjective nature.

The criteria developed to evaluate and compare the factual or objective type information findings

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of the questionnaire are three in number, as listed below. The second type of information was tabulated and presented for information and guidance with no attempt made to evaluate it except that of summarization and comparison.

#### Criterion 1

Entrance requirements and procedures which have been used for a reasonable time and then discarded are unsatisfactory. A reasonable length of time will be at least one year.

The number of similar experiences by school directors, in using and discarding the same entrance requirements and procedures, should indicate those which are not satisfactory.

#### Criterion 2

Entrance requirements and procedures which have been retained after a reasonable trial are satisfactory. A reasonable length of time for trial will be considered two years or longer.

Such action indicates that, in the opinions and experience of the users, the entrance requirements and procedures are as satisfactory as they have been able to develop. The number of similar adoptions and retentions by directors should indicate their value.

#### Criterion 3

Entrance requirements and procedures may give different degrees of satisfaction. Each respondent to the questionnaire was requested to evaluate the priorities used by giving a rating of from 1 to 10 with 1 being the highest value and 10 the lowest. Similar ratings by directors should indicate the degree of satisfaction they are receiving from the use of such procedures, as well as their estimated value. It was realized that these criteria are not examples of scientifically developed standards. They do, however, seem to apply to the type of data gathered in this study.

When the data collected were tabulated on Tables 3, 4, 5, 6, 7, 8 and 9, it was found that the above mentioned criteria could not be used to evaluate them because of insufficient replies to the questions. It therefore became necessary to devise other means for determining the value and usefulness of the data gathered.

The new criterion selected and approved by the head of the industrial education division and the supervisor of research in education of the Colorado Agricultural and Mechanical College was: the majority opinion of value and majority use of procedures and entrance requirements to trade schools and classes should indicate their relative value.

## Chapter IV

### FINDINGS

In securing the data, questionnaires were mailed to 286 directors of trade schools. Replies were received from 182 or approximately 63 per cent, and 104 or 36 per cent failed to respond. Four of those who answered failed to identify their questionnaires. The number and spread of these respondents is presented in Table 1.

The directors in 11 states failed to reply; therefore, no data from these states are included in this study. These 11 states are: Iowa, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, North Dakota, Oregon, South Dakota and Washington. The states omitted from the study and the number of directors contacted in these states is presented in Table 2.

A total of 111 specific trades or occupations were reported in addition, to some commercial, home economics and related occupations classes. Only those which might be considered bona fide trades are dealt with in this study. A list of these selected trades and the number of schools teaching each is contained in Table 10.

Table 1.--NUMBER AND SPREAD OF QUESTIONNAIRE RESPONDENTS

States	No. schools contacted	No. schools responding	No. schools not responding	Per cent returns
Alabama	3	2	1	66
Arizona	7	7	0	100
Arkansas	2	2	0	100
California	15	11	4	73
Colorado	3	2	1	66
Connecticut	12	9	3	75
Delaware	1	1	0	100
District of Columbia	3	1	2	33
Florida	6	4	2	66
Georgia	3	1	2	33
Idaho	2	1	1	50
Illinois	9	4	5	44
Indiana	4	4	0	100
Iowa	2	0	2	0
Kansas	1	1	0	100
Kentucky	4	1	3	25
Louisiana	5	3	2	60
Maine	1	0	1	0
Maryland	5	4	1	80
Massachusetts	34	24	10	70
Michigan	8	5	3	62
Minnesota	4	4	0	100
Mississippi	1	0	1	0
Missouri	2	1	1	50
Montana	1	0	1	0
Nebraska	1	0	1	0
Nevada	1	0	1	0
New Hampshire	1	0	1	0
New Jersey	19	12	7	63
New Mexico	2	1	1	50
New York	38	28	10	63
North Carolina	1	1	0	100
North Dakota	2	0	2	0
Ohio	18	9	9	50
Oklahoma	3	1	2	33
Oregon	3	0	3	0
Pennsylvania	18	10	8	55
Rhode Island	2	1	1	50
South Carolina	2	1	1	50
South Dakota	2	0	2	0

Table 1.--NUMBER AND SPREAD OF QUESTIONNAIRE  
RESPONDENTS.--Continued.

States	No. Schools contacted	No. schools responding	No. schools not responding	Per cent returns
Tennessee	5	1	4	20
Texas	4	2	2	50
Utah	6	6	0	100
Vermont	2	2	0	100
Virginia	3	3	0	100
Washington	3	0	3	0
West Virginia	2	1	1	50
Wisconsin	8	5	3	62
Wyoming	2	2	0	100
	286	178	108	
Unidentified		4	- 4	
Total	286	182	104 Ave.	63

Table 2.--STATES EXCLUDED FROM THE STUDY BECAUSE OF  
THE LACK OF REPLIES TO QUESTIONNAIRES

States	School directors contacted
Iowa	2
Maine	1
Mississippi	1
Montana	1
Nebraska	1
Nevada	1
New Hampshire	1
North Dakota	2
Oregon	3
South Dakota	2
Washington	3



The findings relating to entrance requirements and procedures to trade classes are divided into two parts; Part I, containing data which are answered by "yes" or "no" or by filling in blanks, and Part II, containing information and opinions.

The first 11 questions in Part I of the questionnaire requested information on the general procedures for admitting students to vocational schools and classes. The data collected include total number reporting, number using this practice now, number who have used the practice but discarded it, number not using the practice, and the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Table 3 on the following pages.

For example: the reports on statement 1, "Any student who desires to enter the class is admitted", show that 177 directors reported. Of these, 42 report using this procedure now and 135 reported that they are not using it. It is noted that 27 directors have used this procedure for two years or longer while 13 directors have tried it and discarded it. Of the 76 who evaluated this procedure 20 rated it high value, while 44 rated it low.

The next 10 questions in Part I of the ques-

Table 3.--GENERAL PROCEDURES FOR ADMISSION TO TRADE SCHOOLS AND CLASSES

Procedures, requirements, organization and policies	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value or importance										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
1. Any stu- dent who de- sires to en- ter the class is admitted	177	42	27	13	135	20	0	4	1	0	3	1	1	2	44	76
2. Students are admitted only with parents re- quest and consent.	172	85	58	1	87	28	4	10	2	2	19	5	6	8	35	119
3. Students must be re- commended by an employer who is en- gaged in the trade for which the student de- cides to train.	168	3	3	2	165	12	1	6	1	2	13	3	9	9	17	73

Table 3.--GENERAL PROCEDURES FOR ADMISSION TO TRADE SCHOOLS AND CLASSES.--Continued

Procedures, requirements, organization and policies	Total number report- ing	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value or importance										Number using now	Total report- ing
					1	2	3	4	5	6	7	8	9	10		
4. Student must be recom- mended by a trade commit- tee	168	7	1	159	10	3	3	0	2	23	1	2	8	21	9	73
5. Students must be recom- mended by a school of- ficial	168	53	1	76	22	4	13	8	6	10	5	3	6	11	92	88
6. Entrance requirements include those in use by employers in the trade	164	34	1	101	27	6	13	6	4	11	5	5	1	12	63	90
7. Written applications for entrance are required	161	48	0	70	26	0	12	4	4	4	4	6	9	10	91	79

Table 3.--GENERAL PROCEDURES FOR ADMISSION TO TRADE SCHOOLS AND CLASSES.--Continued

Procedures, requirements, organization and policies	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value or importance										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
8. Books and personal equip- ment must be in students' possession before being admitted to class	173	13	5	0	160	11	3	5	1	1	9	2	3	8	30	73
9. Trade ad- visory commit- tees are or- ganized for specific classes	163	82	52	0	81	33	7	14	6	2	12	3	1	4	7	89
10. A general trade advisory committee is organized for the school	176	88	46	1	88	26	5	8	4	6	15	3	3	3	8	81

Table 3.--GENERAL PROCEDURES FOR ADMISSION TO TRADE SCHOOLS AND CLASSES.--Continued

Procedures, requirements, organization and policies	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value or importance										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
11. The num- ber in the class is lim- ited according to placement possibilities	159	76	35	0	83	21	6	10	7	2	16	5	6	9	6	88

A discussion of these items pertaining to General Procedures is given in the following chapter.

tionnaire, questions 14-23, requested information on the personal characteristics required for admitting students to trade classes. The data include total number reporting, number using this practice, number who have used the practice but discarded it, number not using and the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Table 4 on the following pages.

For example: the reports on question 14, "The minimum entrance age", show that 167 directors reported on this requirement. Of these, seven indicate that they have no minimum entrance age, two have established 12 years as their minimum entrance age and two directors have used this latter procedure for two years or longer. All three directors who rated the "No minimum entrance age" requirement rated it low or of an unsatisfactory nature. The two directors who rated the "12 year entrance age" requirement, both rated it of high value or satisfactory. None of the directors rated the "no minimum entrance age" requirement as being satisfactory while one rated it lowest on the scale. None of the directors rated the "12 year minimum entrance age" as being unsatisfactory while two rated it as being satisfactory.

The next eight questions in Part I of the



Table 4.--REQUIRED PERSONAL CHARACTERISTICS

Procedures, requirements, and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
14. The mini- mum entrance age																
No. min.		7	0											2	1	3
12 years		2	2			1		1								2
13 years		6	2					1		1						2
14 years		67	30			10	4	5	1	1	6	2		1	1	31
15 years		22	7			4	1	1								6
16 years		45	14			6	2	1			3				2	14
17 years		8	2			1										1
18 years		10	7			2		1	1		1				1	6
Total number reporting	167	167	64			Total number reporting										65
15. The maxi- mum entrance age																
No. max.		86	25			5	1	4	1	3	2			4	6	26
15 years		1	0													
17 years		4	2						1		1					2
18 years		4	2			1									1	2
19 years		7	4					1	1							2
20 years		22	5					3	2		1				1	7
21 years		24	8			1	1	1			2				3	8
24 years		2	2						1					1		2

Table 4.--REQUIRED PERSONAL CHARACTERISTICS.--Continued

Procedures, requirements, and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
25 years		3	1					1				1				2
30 years		1	0				1									1
35 years		2	2				1	1								2
45 years		2	2			1									1	2
50 years		1	1									1				1
55 years		1	1									1				1
Total number reporting	160	160	55			Total number reporting										58
16. Problem cases:																
Are admitted		25	8			3			1		1				5	10
Are not ad- mitted		35	6			6		1		1	1	1			1	11
Admitted on probation		119	42			12	5	5	4		11	1	3	2	3	46
Total number reporting		179	56			Total number reporting										67
17. Person- ality governs admission ac- cording to trade stan- dards	169	84	39	1	85	16	5	12	6	7	21	2		4	6	79

Table 4.--REQUIRED PERSONAL CHARACTERISTICS.--Continued

Procedures, requirements, and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
18. Appearance governs admis- sion according to trade practice	163	66	33	1	97	9	4	9	6	3	23	5	3	5	11	78
19. National- ity governs ad- mission accord- ing to trade practice	157	31	14	0	126	9	4	4	3	3	8	3	6	8	25	70
20. Physical condition gov- erns admission according to trade practice	174	141	64	0	33	36	10	14	6	6	7		3	1	2	85
21. Mentality governs admis- sion according to trade prac- tice	170	135	62	0	35	35	8	18	2	4	7	2	2	2	2	82

Table 4.--REQUIRED PERSONAL CHARACTERISTICS.--Continued

Procedures, requirements, and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report ing
						1	2	3	4	5	6	7	8	9	10	
22. Physical examination re- quired	175	63	21	1	112	24	6	11	5	2	6	2	3	4	4	67
23. Students' IQ and EQ are given careful consideration in admitting them to trade classes	166	100	43	2	66	21	4	18	7	5	13	5	3	4	2	82

questionnaire, questions 26-33, requested information on scholastic attainment required for admitting students to trade classes. The data includes total number reporting, number using this practice now, number who have used the practice but discarded it, number not using and the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Table 5 on the following pages.

For example, the reports on question 26, in the questionnaire, "School grade required", show that 170 directors reported on school grades being considered a necessary entrance requirement to trade classes. Of these, 97 require grammar grade graduation and 34 have used this requirement for two years or longer. Fifteen directors reported this requirement as rendering the highest degree of satisfaction and one reported that in his it was of least value or use. The remaining number of the 36 directors evaluating this requirement rated it between these two extremes.

The next five questions in Part I of the questionnaire, questions 36-40, requested information on tests required for admitting students to trade classes. The data include total number reporting, number using this procedure now, number who have used the practice but discarded it, number not using, and

Table 5.--SCHOLASTIC ATTAINMENT REQUIRED FOR ENTRANCE

Requirements and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
26. Required																
Grammar grade																
graduation		95	34			15	3	7	2	1	3	3	1	1		36
High school																
graduation		12	4			2		1	2							5
No schooling																
considered		12						1	3							4
Other:																
Junior high		12	3			2		1	1			1				5
graduation																
5th grade		1														0
6th grade		4													1	1
9th grade		23	6			2	1	2	1		1					7
10th grade		10	4			2	1		1		3				1	8
11th grade		1														0
Total		170				Total number reporting										66
27. Quality																
of school																
grades re-																
quired:																
Must be high		13	2			1				1						2
Average Satis-																
factory		111	37			16	8	11	3	6	2	1	1	1		49



Table 5.--SCHOLASTIC ATTAINMENT REQUIRED FOR ENTRANCE.--Continued

Requirements and considerations	Total number reporting	Used 2 years or longer	Number using now	Used and discarded	Number not using	Number reporting degree of value, importance or satisfaction										Total reporting
						1	2	3	4	5	6	7	8	9	10	
Will take failures		26	70			7	2	3		7	2	3	1	2	1	28
Grades not considered		6	24			2	1	1			3		1			8
Total			179			Total number reporting										87
28. School grade records required																
From grades		39	102			16	5	8		2	6		2	2	2	43
From high school		31	103			14	5	9	1	1	7	2	2		2	43
From college		2	8			1		1			1	1				4
Other:																
jr. high		1	4											1		1
Total			149			Total number reporting										91
29. Personal records from other schools are required	167	56	120	1	47	19	4	7	6	6	7	1	1	1	3	55
30. Previous training or experience is required for ent.	168	9	18	2	150	5				1	1		1			8

Table 5.--SCHOLASTIC ATTAINMENT REQUIRED FOR ENTRANCE.--Continued

Requirements and considera- tions	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
31. The stu- dent's aptitude in pre-vocation- al classes is given careful consideration in admitting him	170	120	54	1	50	23	8	12	2	2	7	1	3		2	60
32. Opinions of Industrial Arts teachers are given careful con- sideration in admitting him.	167	115	53	2	52	16	5	12	8	2	11	2	4	1		61
33. Good grades in mathematics and science are consid- ered basic and necessary	167	98	41	3	69	12	2	14	1	4	7	2	3		2	47

the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Table 6 on the following pages.

For example, the reports on question 36, "Entrance examinations are required", show that 168 directors reported on this entrance requirement. Of these, 33 are now requiring entrance examinations, 11 have used such a requirement for two years or longer, three have used this requirement and discarded it, while 135 are not requiring entrance examinations. Four directors rate this requirement as of greatest importance while two think it of least importance. The remaining 14 directors who rated this requirement between these extremes.

The next five questions in Part I of the questionnaire, questions 43-47, requested information on guidance practices required for admitting students to trade classes. The data include total number reporting, number using this practice now, number who have used the practice but discarded it, number not using and the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Table 7 on the following pages.

For example: the reports on question 43,

Table 6.--TESTS WHICH STUDENTS ARE REQUIRED TO TAKE FOR ADMISSION

Requirements and proced- ures	Total number report- ing	Number using now	Used 5 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
36. Entrance examinations are required	168	33	11	3	135	4	1	3	1	1	1	1			2	14
37. Aptitude tests are given before admission	172	67	24	3	105	21		5	2	3	6	5	1		1	44
38. Perfor- mance tests are given be- fore admission	165	32	13	3	133	4	2	2		1	1					10
39. Special tests such as hearing, color blindness, are given before entrance	173	47	19	2	126	11	2	1	2	1	3		1		4	25

Table 6.--TESTS WHICH STUDENTS ARE REQUIRED TO TAKE FOR ADMISSION.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 5 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
40. Students are assigned to classes or rejected upon the results of these tests	157	52	18	2	105	7	2	3	2	3	1			2		20

Table 7.--GUIDANCE SERVICE RENDERED STUDENTS

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
43. All stu- dents are interviewed and counseled before being admitted or shortly there- after by:																
Trade teachers only		20	10			8		2	2		1				1	14
Counselor only		28	9			6	1		1							8
Principal only		27	5			4	2	3	1			1			1	12
Trade teacher & counselor		35	8			6		2	1			1				10
Trade teacher & principal		30	13			10	1		2							13
Counselor & principal		22	9			2	2				1				2	7
By all three		16	3			5										5
Others:																
Instr. & voc. direc- tor		2	0													0
Principal & voc. dir.		1	0													0



Table 7.--GUIDANCE SERVICE RENDERED STUDENTS.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
43.--Continued																
Prin., Coun. & Voc. Dir.		1	1			1										1
Prin., & Dept. Head		1	0													0
Total	183	183				Total reporting										70
44. Students are assigned to the classes for which they are registered without coun- seling inter- view	168	18	6	3	150				1	1				1	4	7
45. Students are enrolled in classes on probation for:																
Weeks, 2		12	4			1	1	2		1	1					6
3		4	1			1		1		1						3
4		3	1			1										1
5		1	0													0
6		19	6					1		1				1		3

Table 7.--GUIDANCE SERVICE RENDERED STUDENTS.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
45.--Continued																
Weeks, 7		1	0													0
8		1	1			1										1
9		5	1			1										1
10		9	4			1	2	1								4
12		1	0													0
14		1	0													0
18		8	2			1		1		1	1					4
19		2	2			1		1								2
20		4	0													0
Months, 1		3	0										1			1
2		1	1									1				1
3		12	1			1		1	1					1		4
4		2	0													0
5		3	1							1						1
6		1	0													0
9		1	1			1										1
10		4	2			1		1								2
Total	96					Total reporting										56

46. Students  
are put in try-  
out courses or  
general shop  
classes to

Table 7.--GUIDANCE SERVICE RENDERED STUDENTS.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
46.--Continued secure exper- ience in the trades taught in the school so they can select the one they like best																
Weeks, 3		1	1			1										1
4		1	1					1								1
5		1	0													0
6		4	2					1								1
7		1	0													0
8		2	0													0
9		5	2			2										2
10		5	2				1								1	2
18		2	1													0
20		1	0													0
31		1	1						1							1
36		3	1			1			1							2
40		3	1			1			1							2
45		1	0													0
76		1	1				1									1
96		1	0						1							1

Table 7.--GUIDANCE SERVICE RENDERED STUDENTS.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
46. Continued																
Months, 1		1	1			1										1
3		1	0													0
4 <sup>1</sup> <sub>2</sub>		2	1			1										1
5		2	0													0
6		2	1					1								1
9		4	2			1		1	1							3
10		9	5			1	1	1	2		1					6
12		2	0			1										1
18		1	0											1		1
Total	176	56			120	Total reporting										28
47. Students take a spec- ial course in guidance as part of their program of studies	165	46	15	2	119	7	2	1	2	1		2	1		1	17

"All students are interviewed and counselled before being admitted, or shortly thereafter. Interview is by trade teacher", show that 20 directors reported on this entrance requirement as being in use in their schools and 10 reported having used this procedure for two years or longer. A total of 182 directors reported on the three parts of question 43. Eight rated interviewing and counselling by the trade teacher as being of greatest value, while one director rated such practices as being of least value. The remaining 14 directors who rated this procedure listed their opinions between the extreme ratings (as indicated on the table).

The next 5 questions in Part I of the questionnaire, questions 50-54, requested information on tuition and registration fees being required for admitting students to trade classes. The data include total number reporting, number using this procedure now, number who have used the practice but discarded it, number not using the procedure, and the rating of each practice. The rating was by assigning a value of 1-10 to each procedure on a descending order, one being the highest rank. These data are presented in Tables 8 and 9 on the following pages.

For example: the reports on question 50, "A tuition or registration fee is charged. Amount\_\_\_\_",

Table 8.--TUITION AND REGISTRATION FEES CHARGED

Requirements and procedures	Total number reporting	Number using now	Used 2 years or longer	Used and discarded	Number not using	Number reporting degree of value, importance or satisfaction										Total reporting
						1	2	3	4	5	6	7	8	9	10	
50. A tuition fee is charged:																
Amount,																
\$ .50		1	1	0												0
1.00		2	1	0												0
2.00		3	1	0				1	1							2
3.00		1	0	0												0
10.00		1	0	0												0
15.00		1	0	0												0
35.00		1	0	0												0
36.00		1	1	0		1										1
61.00		2	0	0												0
75.00		1	0	0												0
135.00		2	0	0									1			1
150.00		2	0	0				1								1
For each shop, \$2.00		1	0	0				1								1
No tuition or fees charged	153	153														
Total reporting	171															6



Table 8.--TUITION AND REGISTRATION FEES CHARGED.--Continued

[illegible]

Table 8.--TUITION AND REGISTRATION FEES CHARGED.--Continued

Requirements and proced- ures	Total number report- ing	Number using now	Used 2 years or longer	Used and dis- carded	Number not using	Number reporting degree of value, importance or satisfaction										Total report- ing
						1	2	3	4	5	6	7	8	9	10	
53.--Continued such classes as welding, painting, cooking, etc.	169	46	17	11	123	9	4	1	4	1	4					23
54. Deposits for breakage, loss, etc. are charged in certain departments	170	49	17	1	121	6	5		1	5	1	1	3			22

Question 5. A special fee is charged for those who come from outside the school district per school year.

Table 9.--TUITION AND REGISTRATION FEES CHARGED STUDENTS

Amounts charged those from out of the school district	No. of schools	Amounts charged those from out of the state	No. of schools	Comparison of charges by the same schools		No. of schools
				Out of district	Out of state	
50¢ daily	1	50¢ daily	1	50¢ daily	50¢ daily	1
\$ 1.50	1	\$ 1.50	1	\$ 1.50	\$ 1.50	1
3.75	1	7.50	1	3.75	7.50	1
5.00	1	8.00	1	5.00	45.00	1
8.00	2	10.00	1	8.00	8.00	1
8.96	1	35.00	1	10.00	10.00	1
10.00	2	36.00	1	0	35.00	1
17.50	1	45.00	2	0	36.00	1
25.00	1	60.00	1	0	45.00	1
30.00	1	75.00	2	60.00	60.00	1
45.00	1	80.00	1	75.00	75.00	2
60.00	1	81.00	1	80.00	80.00	1
70.00	2	90.00	4	80.00	100.00	1
75.00	5	100.00	4	81.00	81.00	1
80.00	2	106.00	1	90.00	90.00	4
81.00	1	110.00	1	99.00	100.00	1
90.00	4	120.00	5	100.00	not admitted	2
99.00	2	125.00	2	100.00	100.00	2
100.00	8	127.75	1	0	106.00	1
110.00	1	130.00	1	110.00	110.00	1
120.00	6	135.00	3	120.00	120.00	5
125.00	4	140.00	2	125.00	225.00	1

Table 9.--TUITION AND REGISTRATION FEES CHARGED STUDENTS.---Continued

Amounts charged those from out of the school district	No. of schools	Amounts charged those from out of the state	No. of schools	Comparison of charges by the same schools		No. of schools
				Out of district	Out of state	
\$130.00	1	\$145.00	1	\$125.00	\$125.00	2
135.00	3	150.00	3	0	127.75	1
140.00	4	160.00	1	130.00	130.00	1
145.00	1	175.00	4	135.00	135.00	3
150.00	9	185.00	1	140.00	140.00	2
160.00	2	200.00	1	145.00	145.00	1
170.00	1	225.00	2	150.00	not admitted	2
175.00	8	250.00	1	150.00	150.00	3
180.00	1			160.00	160.00	1
185.00	1			175.00	175.00	1
190.00	1			185.00	185.00	1
200.00	3			200.00	200.00	1
225.00	1			0	200.00	1
250.00	1			225.00	225.00	1
				250.00	250.00	1
Number of schools not admitting students from out of the state						14
Number of schools reporting no charge for students outside of the school district or outside of the state						53
Number of schools reporting on this question						129

show that 171 directors reported on this question. Of these, one reported charging a fee of \$.50 and had been doing so for a period of two years or longer. One hundred fifty three directors reported that they do not charge tuition fees. The one director who reported a fee of \$.50 did not rate this practice.

The first 11 questions in Part II of the questionnaire requested information of a subjective and descriptive nature pertaining to entrance requirements, student selection and other practices related to this study.

Each of these questions and statements is presented and numbered in the order of its appearance in the questionnaire. The actual responses as received are listed after each. Only those replies which present different ideas or information are listed. These replies represent the opinions of the school directors who answered the questionnaire.

Negative and affirmative replies are given in separate lists but in no special order. These data are tabulated as follows and are self explanatory:

1. List the trade classes which you have in your school.

A compiled list is presented in Table 10.

This table shows that there are 111 different trades taught in the 182 trade schools con-

Table 10.--TRADES TAUGHT IN VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE

Trades	Number of schools teaching the trades	Code
1. Auto Mechanics	98	1
2. Auto Electricity	1	28
3. Auto Painting	1	104
4. Auto Body and Fender Repair	12	130
5. Auto Service Station Work	1	34
6. Aviation Mechanic	12	21
7. Aircraft Drafting and Design	2	13
8. Aircraft Motors	3	14
9. Aircraft Welding	2	15
10. Aircraft Machine Shop	1	16
11. Aircraft Riveting	1	18
12. Aircraft Sheet Metal	5	134
13. Aircraft Metal Fittings	1	22
14. Aeronautics	1	23
15. Aircraft Construction	2	33
16. Aircraft Maintenance	1	135
17. Architecture	1	26
18. Architectural Drafting	11	53
19. Air Conditioning	2	97
20. Building Trades	6	45
21. Building Maintenance	1	25
22. Bricklaying	7	46
23. Boatbuilding	3	75
24. Baking	6	68
25. Barbering	5	73
26. Bookbinding	1	74
27. Cabinetmaking (Woodwork)	57	4
28. Carpentry	47	5
29. Chemistry (Industrial)	10	63
30. Catering	1	70
31. Chef Training	1	108
32. Cafeteria Training	3	110
33. Commercial Cooking	14	132
34. Cosmetology	27	101
35. Commercial Art	16	123
36. Dressmaking-Commercial	25	136
37. Dressmaking-Design	1	137



Table 10.--TRADES TAUGHT IN VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued

Trades	Number of schools teaching the trades	Code
38. Dental Assistants	1	82
39. Dental Mechanics	1	120
40. Diesel Engines	1	35
41. Dramatics-Vocational	1	52
42. Electricity	15	2
43. Furniture Finishing	1	12
44. Floriculture		
Landscape Gardening	3	32
45. Food trades	6	59
46. Fur Manufacturing	1	67
47. Foundry	8	92
48. Forging	10	98
49. Factory Maintenance	1	103
50. Garment Making	2	133
51. Glove Making	1	95
52. Glove Cutting	1	96
53. Hosiery Repair	1	76
54. Heating and Ventilating	1	91
55. Heat Treating	1	99
56. Interior Decorating	2	58
57. Laundering	3	89
58. Linotype	1	94
59. Machine Shop	113	3
60. Mill Cabinetwork	6	19
61. Millwright	1	27
62. Maritime Occupations	1	38
63. Millinery	5	39
64. Metal Trades	5	47
65. Music-Vocational	2	50
66. Masonry	3	60
67. Meat Cutting	2	69
68. Motor Winding	4	79
69. Maid Service	1	87
70. Machine Maintenance	1	107
71. Medical Secretary	2	124
72. Neon Lighting	1	29
73. Needle Trades	2	66
74. Nursery Training		
Child care	3	118
75. Nurses Attendants	2	120
76. Optical Mechanics	1	80
77. Printing	65	10
78. Photographic Work	5	17

Table 10.--TRADES TAUGHT IN VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued

Trades	Number of schools teaching the trades	Code
79. Pattern Making Plaster	1	24
80. Pattern Making Wood	21	131
81. Pattern Making Metal	1	102
82. Painting and Decorating	26	30
83. Power Engineering	3	31
84. Power Sewing and Dressmaking	19	41
85. Plastering	1	61
86. Plumbing and Heating	5	64
87. Plumbing and Refrigeration	1	65
88. Photo Lithography	2	113
89. Plumbing	16	125
90. Radio Construction and Repair	19	6
91. Radio Operation	1	83
92. Restaurant Training	5	112
93. Refrigeration	5	129
94. Sheet Metal Work	38	7
95. Silversmith	1	51
96. Shoe Repairing	1	85
97. Shoe Making	2	119
98. Sign Painting	3	105
99. Show Card Writing	2	117
100. Steam Engineering Boiler Operation	2	121
101. Tool and Diemaking	7	37
102. Textile Manufac- turing	4	62
103. Telegraphy	1	84
104. Tailoring	4	109
105. Team Room Service	3	111
106. Upholstering	2	71
107. Voice Transcription	1	114
108. Welding-Gas	41	8
109. Welding-Arc	9	43
110. Watchmaking	2	78
111. Waitress Training	4	127

sidered in this study. It will be noted that the five trades most frequently taught are, machine shop in 113 schools, auto mechanics in 98 schools, printing in 65 schools, cabinet work (woodwork) in 57 schools, and carpentry in 47 schools. Each school is identified by the code numbers in the right hand column of the table.

2. Do you think there should be a selection of students for trade class instruction? Why?
- Of the 182 directors answering this question, 162 or 89 per cent answered "yes", 17 or 9 per cent answered "no" and three or one per cent did not reply to the question.

Reasons:

Affirmative statements

- a. There is too much waste of pupils' time and school facilities if training is given to misfits.
- b. In order to do more effective teaching, render service to the learner and conserve state and federal funds.
- c. To determine industrial background, aptitudes and inclinations.
- d. It would provide less chance for "dumping" and get only students into classes who belong there.
- e. Students without aptitude or interest in any given trade will not be able to meet competition.

- f. It would be useless to train students who are not acceptable to industry.
- g. Since we are limiting enrollment to the needs of the community, those admitted should be capable of succeeding.
- h. Poor grade students use and tie-up valuable and often limited equipment without the training received accomplishing the desired results. Not all persons are fitted to be mechanics.
- i. To assure reasonable possibilities of success after training.
- j. Our equipment is so limited and we have so many good boys that it is not fair to take in just anyone without selecting them through some method.
- k. Because of tendency of academic schools to look upon the vocational school as suitable for academic failures, also to build up the confidence in the school training upon the part of employers. The school has an obligation to prevent students from entering fields of work for which they are unfitted to attain success.
- l. Different trades have different requirements. Some selection is necessary to match aptitudes and requirements.
- m. Should know individuals' qualifications before accepting him for training. No company hires without knowledge of individual in detail.
- n. Helps prevent ill considered choice upon part of pupil.
- o. Only those should be trained who we can justify placing in industry.
- p. You cannot teach a blind horse to paint.
- q. Too much wishful thinking is done by students.

- r. Not everyone is fitted for trade work either physically, mentally or by disposition.
- s. Trade school instruction is too expensive to be used as try-out courses.
- t. To save time and effort of students, reputation of school and prevent useless economic waste.
- u. If this is not done, many with a slight aversion to books or a desire for a change would flood the courses and keep out qualified persons for training to meet urgent industrial needs.
- v. That is what guidance means to me.
- w. Because of the limited number that can be accommodated.
- x. Because even with effort at selection we finally get approximately one out of five who prove to be of trade calibre.
- y. Because trade needs and aptitudes of pupils are not always in accord with pupils' desires.
- z. The success of this school is based upon placement.

#### Negative statements

- a. Because the high school age is the period in the life of a child when he is trying to find his interests. He should therefore have a chance to explore the trade class.
- b. Because it is very difficult to determine the mechanical ability of any student.
- c. Everybody can do something well. Try to find it.
- d. Would restrict the individual right of choice in a free system of public school education.

- e. The ones not selected in our school have proven and turned out to be the best mechanics.
- f. Free choices of courses provides tryout experiences and adjustment opportunities for a rather large group who may not otherwise be served by school systems, if only probable successes were selected and the others rejected.

3. Do you think that the entrance requirements should approximate those which govern an employer when he hires an apprentice?

Of the 182 answering the questionnaire, 136 or 74 per cent answered "yes", 39 or 21 per cent answered "no" and 7 or 3 per cent did not reply to the question.

4. Do you think that enrollment in classes should be limited to employment possibilities? Why?

Of the 182 answering the questionnaire, 89 or 48 per cent answered "yes", 83 or 45 per cent answered "no" and 5 or 2 per cent failed to answer the question.

Reasons:

Affirmative statements.

- a. No necessity for training for jobs that do not exist.
- b. This is a service to the learner. Avoids friction with labor.
- c. Because it avoids discouragement of graduates when jobs are not available.
- d. Otherwise vocational objectives would be



lost. Success of the training and of the school depends upon placement. If not done, classes would become exploratory or pre-vocational.

- e. Equalizes supply and demand.
- f. A boy training to be a printer wants to be a printer. A sense of frustration or failure arises if he feels that he is unwanted because of a surplus of trained printers. Also wage levels will be seriously effected if more trained mechanics in a given trade are available than can be absorbed.
- g. We do not have time nor facilities to train people who cannot be placed on jobs.
- h. To prevent surplus of trained workers.
- i. Because labor will always object to a trade school overloading the trades.
- j. Unfair to the individuals whose time has been wasted preparing for a field of work in which they may not find employment. Unfair also to those already employed in that field.
- k. Placement is one of the major concerns of the school.
- l. Too many trained and unplaced causes unrest in the department.
- m. Excessive surplus of mechanics in any community will lower trade standards.
- n. To an area within 100 miles of training.
- o. Yes, if a large enough territory is taken into consideration. Workers are much more mobile now.
- p. The object of our school is to train for placement.
- q. This is definitely so when facilities are limited.

- r. This is only reasonable. Should enroll a few more on account of drop-outs.
- s. There is no more use in training a boy who cannot be placed than in manufacturing a product that will not sell.
- t. Power machine openings for colored girls are extremely limited. Discouragement results if training is not in line with placement possibilities.

Negative answers

- a. Employment possibilities are not fixed as present emergency shows. A pupil with interest and aptitude should not arbitrarily be denied training which is available.
- b. There is a national migration of workers in this country at all times and the local need for tradesmen should not be too much of a governing factor in training. However it should be a point for consideration.
- c. In no given area can employment possibilities be certainly analyzed. We have placed all our graduates but three during the past eight years.
- d. Because the weeding out of those after the probationary period usually leaves the number that can be absorbed by industry.
- e. Needs are too variable. Training should be broad and basic.
- f. No accurate methods have been set up that will give the number needed in any trade.
- g. Due to the fact that families do not stay in any one location for a long period of time. Training will often fit a person for another job with only a small amount of special training.
- h. Equal opportunities for all. Students may secure employment in other localities.

- i. If a person wants to be a tradesman, what right has anyone to stop him anymore than to not allow a person to go to high school.
- j. Because of a shifting population and uncertainty of requirements. Some surplus is needed to fill the ranks of those leaving the trade.
- k. Education must be given before, like life insurance, it must be had before it is needed.
- l. In many cases students well adapted to certain trades would be excluded from entrance. It would be better for them to secure employment elsewhere in a trade of their choice, rather than work as an untrained worker.
- m. Experience shows that a person skilled in the use of tools in one trade where there may be limited employment soon adapts himself to another.
- n. 53 per cent graduate according to our experience. Enrollment should be based upon the number who graduate.
- o. There will always be boys to educate regardless of conditions outside.
- p. How do we know what the demand will be four years hence.
- q. Many of us have learned a trade we didn't follow but which aided us to obtain employment in other trades or occupations. More than one trade is of value to an individual.
- r. Under normal conditions there are not enough jobs to go around. Youth should be trained to compete.
- s. Enrollment will tend to regulate itself.
- t. Because it is the duty of the school to train youth to the best of its ability in the trade he is best fitted for if there are facilities available.

- u. Competition among students will raise standards. Should have free agency. If held too close to employment possibilities, the trade may become the controller.
- v. Educate for the nation's welfare not just for local employment possibilities.
- w. Not altogether because of impossibility of judging the power of related industries to absorb partially trained persons.

5. How do you determine this number to receive training?

Of the 182 answering the questionnaire, 162 or 89 per cent replied to this question and 20 or 10 percent did not.

- a. By the training stations open in the class.
- b. We don't.
- c. By local contact with the trade and an estimate of the boys available who will be really employable.
- d. By those applying for training.
- e. No limit except training facilities.
- f. By previous yearly placement records.
- g. Through advisory committees.
- h. By the demand in the trade determined by employer and employee (union) requests.
- i. Trade advisory committees and personnel managers.
- j. By experience very largely in placements. Also by contacts with industry. As a matter of fact this tends to be automatically controlled. If placement in a certain trade is not available, the boy and his parents know something about it and he does not apply for enrollment.

- k. By surveys and advice of advisory committees.
- l. By a prognostic test and by proper counseling.
- m. Survey and last year's placements.
- n. By supply and demand based upon our ability to place graduates. Questionnaire sent to manufacturers each spring.
- o. By chance in our case. Experience has proven that the output of this school is not greater than employer needs.
- p. Advisory committees, state and federal employment figures and our placement records.
- q. By the reports of our placement coordinator.
- r. By consultation with industry and labor and by allowing a percentage of the number now employed with allowance for future changes.
- s. Advisory committee for each department.
- t. Make a good guess at it.
- u. By constant contact with the trade fields and advice from advisory committees and other sources of information.
- v. By an average over a period of years of employment.
- w. By the demand of the U.S. Employment Service and trends shown by labor statistical records.
- x. Cannot exceed quota set by advisory committee.
- y. Apprentice advisory committees.
- z. Employment possibilities, both local and area. Also allied fields. Then add 30 per cent for drop-outs and for those who go into other work.

6. What is done with applicants who, for one reason or other, are rejected by your school?

Of the 182 answering the questionnaire, 165 persons or 90 per cent answered this question and 17 or 9 per cent did not.

- a. Nothing.
- b. They are advised to enter a general course and in most cases advised to take additional try-out courses.
- c. Given trial in non-trade classes.
- d. Usually return to the academic school or go into unskilled work.
- e. They are advised to go into other fields where skill is not a main requirement.
- f. Are put into industrial arts classes or they drop out of school.
- g. Advised to complete as much schooling as possible in school they are attending, if temporarily held out. If rejected we try to suggest alternate training.
- h. Put on waiting list.
- i. Returned to junior or senior high school or assisted to get employment in work they can do.
- j. Enroll in other departments.
- k. Assist in obtaining employment in keeping with ability.
- l. Turned over to superintendent of schools for placement.
- m. Kept in secondary school or referred to other agencies, in school system for assistance as clinics, ungraded classes, etc.



- n. An effort is made to find an educational opportunity for them somewhere.
- o. Told to attend their regular school for another year and then apply again.
- p. Advised on other schools offering suitable courses. Contacts are often made for them.
- q. Attempt to guide them into some type of education that will fit their needs better than this school can do.
- r. Referred to guidance and consultation service.

7. What do you do with those who insist upon enrolling and whose parents also insist that they should enter the trade class, but who do not meet your entrance requirements?

Of the 182 answering the questionnaire, 168 or 92 per cent replied to this question and 14 or 7 per cent did not.

- a. They do not enroll.
- b. They are rejected but with an effort to find a place they are fitted for, school or work.
- c. Refer them to superintendent or trade committee.
- d. We enroll them and let them find out their mistake by experience.
- e. Undesirable students are given typical hard work in trade as a trial test. If attitude is alright, we try to prepare them for some lower employment level.
- f. Give them pre-trade training with the understanding that as they improve themselves they may be transferred.

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- g. Give them a trial to prove whether or not student can profit from class. If after trial, he seems unable to reach point of employability, he is asked to drop.
  - h. Explain to applicant and parent the inadvisability of student pursuing trade desired and reject.
  - i. Send him back to public school. Say unable to profit from instruction offered.
  - j. If there are vacancies, he is admitted.
  - k. Enroll on probation.
  - l. Put him in the general shop and give him as much trade training as we can in this shop.
  - m. We have a greater demand than we can meet and some selective means must be used. We have some difficulty.
  - n. In a small town you take them. You also may be wrong in judgement.
  - o. Some cases have accepted boys but put responsibility upon parents for placement.
  - p. Law compels us to do the best we can.
  - q. Waiting list takes care of those who shouldn't be admitted.
  - r. Have a waiting list. All are taken according to aptitude tests.
  - s. Accept some as gesture of good will towards juvenile court, social agencies, etc.
  - t. We accept if we believe the boy has the slightest chance.
  - u. Only reject when physical or mental condition would be a hazard to other students.
  - v. We accept all students who apply for admission.
  - w. We enroll them. Other students soon see that they are eliminated.

- x. Give them a trial to allow them to convince themselves.
- y. Advise them that other courses are available which may be more valuable to them.

8. Who registers the students?

Of the 182 answering the questionnaire, 177 or 97 per cent answered this question and 5 or 2 per cent did not. The persons who register the students are included in the table presented below. The frequency is included but no attempt is made to arrange these in any order of frequency.

Table 11.--STUDENT REGISTRATION

Persons who register students	Number schools following same procedure
1. Principal	2
2. Principal and director of vocational education	2
3. Principal's office and instructor	4
4. Principal and office clerk	5
5. Principal and trade teacher	6
6. Principal and counselor	8
7. Principal and class advisors	1
8. Principal and coordinator	1
9. Principal's office	8
10. Principal's office and guidance committee	1
11. Assistant principal	4
12. Guidance department or school guidance officer	3
13. Guidance counselors in junior high	1
14. Head of guidance committee and principal of high school and junior high school	1

Table 11.--STUDENT REGISTRATION.--Continued

Persons who register students	Number schools following same procedure
15. Counselor who makes student's program and teachers register students in classes	1
16. Counselor--Vocational	9
17. Counselors and office force	1
18. Admission counselor	2
19. Counselors and department heads	1
20. High school counselor and dean of junior college	1
21. Faculty advisor or home room teacher	1
22. Coordinators	7
23. Coordinators and teachers	1
24. School clerks	14
25. School office after approval of principal and instructor	3
26. High school office	2
27. Registrar	10
28. Registrar, after student has consulted with the coordinator and trade instructor	1
29. High school registrar upon signed recommendation from teacher, director and coordinator	1
30. Director of vocational education	5
31. Dean	1
32. Trade teachers	9
33. Teacher, department head and registrar	1
34. Instructor and counselor	1
35. Teachers upon direction of vocational director	2
36. Teacher, counselor and head of department	1
37. Shop teachers and certain academic teachers	1
38. Faculty and head of department	1
39. Home room teachers	1

Table 11.--STUDENT REGISTRATION.--Continued

Persons who register students	Number schools following same procedure
40. Members of school faculty	6
41. Received by instructors and approved by principal	1
42. Department head	1
43. Group at school after guidance and congerence	2
44. Parents and school he comes from	1
45. Regular high school students	1
46. University	1

9. What provisions do you have for those who, because of lack of funds, cannot purchase books or equipment nor pay fees?

Of the 182 answering the questionnaire, 176 or 96 per cent answered this question, and 6 or 3 per cent did not. Eighty nine or 48 per cent of the schools reported furnishing all books and equipment. The provisions of the various schools for assisting students in securing books and equipment and in paying fees and the number of schools having tools are included in the table below.

Table 12.--PROVISIONS FOR ASSISTING  
NEEDY STUDENTS

Provisions for assisting students to secure books, equipment and pay fees	No. of schools using this procedure
1. Special school fund or department provided for this purpose	26
2. NYA provides work so they can earn money	25
3. No provision	8
4. School furnishes all such equipment free	89
5. Work is provided out of school hours by school	12
6. School find work outside for needy ones	4
7. School loans books and equipment to needy	6
8. Signature of guarantor sufficient until students can pay	4
9. Time payments arranged	8
10. Outside agencies help	3
11. School cancels fees	4
12. County cares for such cases	1
13. Do not have this problem	8
14. City welfare reimburses board of education for such costs	1
15. Teachers' personal contributions	1
16. Scholarships	1
17. Through student loan fund	3
18. Taken care of by faculty	1
19. Service clubs assist	3
20. Rent books and equipment	1

10. How do you determine a student's personality?

Of the 182 answering the questionnaire, 162 or 89 per cent answered this question and 20 or 10 per cent did not. Nineteen or 10 per cent reported that they made no effort to do



so and 143 or 78 per cent stated that they plan to do so.

- a. Personal interview and questionnaires to teachers.
- b. Teachers' judgement.
- c. In a small town like this we know them and their parents.
- d. By his daily activity.
- e. By recommendations from former teachers.
- f. Reaction to counselor and in trade classes.
- g. By IQ and written temperment test.
- h. By observation.
- i. Through constant association with him.
- j. Through previous school records.
- k. By how he gets along with other students.
- l. How he adjusts himself to work.
- m. Use of a personality rating scale.
- n. By teachers' ratings.
- o. Through personality inventories.
- p. Through personality rating charts used by all instructors.
- q. By way he acts and answers when registering and filing out questionnaire.
- r. By the outstanding qualities which make him different from others.
- s. Recommendations from home room teacher.
- t. From student's cumulative record book.
- u. By rating compiled from all teachers' ratings.

- v. By pre-registration interviews.
- w. By use of a standard guidance chart.
- x. Through self rating scales.
- y. Vote of faculty.
- z. Through use of Bell adjustment inventory.
- aa. By type of family he comes from and appearance.

11. What standards have you set up for students' appearance?

Of the 182 answering the questionnaire, 162 or 89 per cent reported on this question and 20 or 10 per cent did not reply to it. One hundred twenty one or 66 per cent made some effort regarding standards. Twenty or 10 per cent, require special clothing or uniforms to be worn, while 41 or 25 per cent reported no standards or effort.

- a. Demand cleanliness and neatness.
- b. Required to wear uniform overalls.
- c. Similar standards to those used by industry in selecting apprentices.
- d. Those acceptable to and used in local industries.
- e. Shop clothing required as worn in the trade.
- f. Clean uniforms required every day.
- g. Standards required by employers for well groomed girls.
- h. Beauty service required once a week for girls.

- i. Students expected to dress in work clothes in shops and street clothes in classes.
  - j. Neatly dressed in street clothes, not dungarees or overalls. All departments have standard uniforms and boys must comply to these requirements.
  - k. According to highest trade standards.
  - l. Student council set-up: cleanliness, neatness, care of clothing and general good grooming.
  - m. Students must provide themselves with uniform designed by school and also uniform work dresses and overalls. Constant inspection.
  - n. Teeth and hair kept clean. Hair brushed. Clothing kept in repair, shoes brushed.
  - o. General tidiness. No "monkey jackets".
  - p. Must have uniform (overalls). Aviation students white coveralls with monograms.
  - q. No lip stick for girls. Collars and ties required for boys.
  - r. Clean and neat even if clothes are old.
  - s. Highest degree of cleanliness required. Clean spotless uniform daily. Shave, bath and physical inspection before school work begins.
  - t. No smell, no grease, clean clothes.
  - u. Why worry--ours improve.
  - v. Must wear clothes recommended by trade.
  - w. Standards are set up by local tradesmen.
12. How do you determine a student's physical condition?

Of the 182 answering the questionnaire, 166

or 91 per cent reported on this question and 16 or 9 per cent did not answer it. Sixty-three or 34 per cent reported requiring physical examinations, while 8 or 5 per cent reported no attention to physical condition of students.

- a. Through observation, record of attendance to see if absent because of frequent illness, etc.
- b. By interview and parental information.
- c. Through a required physical examination.
- d. Annual school examinations.
- e. Only through physical education classes and teachers' judgement.
- f. Students examined only when defects are noticed.
- g. Through records from schools previously attended.
- h. Special exams by doctors for students in barbering, beauty culture and food trades.
- i. Board of health exams. Not very thorough.
- j. Appearance and behavior.
- k. Blood test required.
- l. Through required dental examinations.
- m. By general inspection only.
- n. School nurse makes examination if needed.
- o. Test eyesight and hearing.
- p. School nurse check up.
- q. Just look them over.

r. From school nurse and physical director.

13. a. What is the extent of physical examinations given? b. Who gives them? c. Who pays the cost? d. Frequency?

- a. What is the extent of physical examinations given?

The different degrees of completeness and the types of physical examinations given students entering trade schools, together with the numbers of schools using each are presented in the table below.

Table 13.--EXTENT OF PHYSICAL EXAMINATIONS

Type of examinations	No. schools reporting
1. Eye, ear, lung, heart, T.B., vaccination, etc.	11
2. Treatment of any observed symptoms needing attention	1
3. Examinations required by the trade	5
4. Medical examination	1
5. General check over	2
6. Standard physical examination	1
7. Thorough examination	7
8. As much as can be given by laymen	1
9. General examination	48
10. Fifteen minute general examination	1
11. General physical examination	13
12. Complete physical	11
13. Blood tests	3
14. Fairly complete examination	1
15. Superficial examination	1
16. Special examination	3
17. Routine examination	1
18. As required by state school law	2
19. Complete inspection	1
20. Inspection	1

Table 13.--EXTENT OF PHYSICAL EXAMINATIONS.--Continued

Type of examinations	No. schools reporting
21. Five minute general examination	1
22. Tests	3
23. Medical examination like insurance	1
24. Dental examination	2
25. Health card from public school	1
26. Extent varies with nature	1

b. Who gives them?

The persons who give physical examinations to students are presented in the table below. The frequency is included but no attempt has been made to arrange them in any order of frequency.

Table 14.--CONDUCTION OF PHYSICAL EXAMINATIONS

Persons who give the examinations	No. schools reporting
1. Physical education director, dentist and principal	1
2. Doctor	24
3. School doctor	53
4. Nurses and doctor	2
5. Teacher and doctor	1
6. School nurse, special cases by doctor	1
7. County nurses	1
8. Doctor or school nurse	1
9. School nurse and city doctor	1
10. Physical director	1
11. Doctor and vocational counselor	1
12. City doctor appointed each year	1
13. State clinic	1
14. School doctor and nurses	17



Table 14.--CONDUCTION OF PHYSICAL  
EXAMINATIONS.--Continued

Persons who give the examinations	No. schools reporting
15. County doctor	1
16. Teachers	1
17. By teacher followed by optician	1
18. School doctor and specialists	1
19. Board of health doctor	1
20. Private doctor or school nurse	1
21. Doctor assigned to school	1
22. School medical officer	1
23. Board of health doctor and nurses	1
24. Director Board of Health	1
25. Medical school inspector	1
26. Medical department (school)	1
27. School doctor, nurse and dentist	1
28. Doctor assigned by Board of Health. Also volunteer doctors, dentists and optometrists	2
29. School and private physicians	1
30. Nurse	1
31. Doctor and county nurses	1
32. School nurse	1
33. Division of medical inspection	1

c. Who pays the cost?

The individuals or agencies who pay the costs of the physical examinations given students are presented in the table below. The frequency is included but no attempt has been made to arrange them in any order of frequency.

Table 15.--RESPONSIBILITY FOR COST  
OF PHYSICAL EXAMINATIONS

Costs paid by:	No. of schools reporting
1. The school	25
2. The students (parents)	7
3. The school district	8
4. The county	3
5. The city (town)	25
6. Tax money	1
7. The state	2
8. Board of education (school board)	33
9. Department of Public Health	2
10. City and state	1
11. Board of Health (Health Department)	4
12. Family, Board of Education, Social Agency	1
13. City Health Department	1
14. WPA	1
15. Volunteers (doctors, nurses, dentists)	4
16. School tax	1
17. Parents or city	1

d. Frequency?

The frequency of physical examinations required of trade school students and the number of schools having the same requirements are presented in the table below. No attempt has been made to arrange these data in order of frequency.

Table 16.--FREQUENCY OF PHYSICAL EXAMINATIONS

Frequency of examinations	No. of schools reporting
1. Annually	58
2. When necessary	10

Table 16.--FREQUENCY OF PHYSICAL  
EXAMINATIONS.--Continued

Frequency of examinations	No. of schools reporting
3. Twice each semester	1
4. Upon entrance	15
5. Upon teachers' recommendation	1
6. Beginning of the 10th year	1
7. No set time (any time)	4
8. Once for all and when needed	2
9. Every six months	3
10. Every two or three years	1
11. Every three years	1
12. Twice a year	4
13. At entrance and special	3
14. Once a year and special (or as needed)	8
15. Upon entrance and then yearly	1
16. Alternate years	2
17. Once during course	1
18. Each term	2
19. Soon after admission	1
20. Upon entrance and as needed	1
21. Once a week for the school	1
22. Occasional on request	1

14. a. Which trades require special tests for applicants? b. What tests do you use?  
c. Degree of value?

Of the 182 answering the questionnaire, 53 or 29 per cent replied that they are using tests, 59 or 32 per cent reported not using tests. Eighteen or 9 per cent evaluated the tests which they use.

Because so few evaluated the test which they

use, part (c) of this question is not included in the table below. The reverse of this table showing tests which were reported used for different trades is contained in Exhibit 5 in the Appendix. The number of schools using each test is indicated in the right hand column. The trade taught and the number of schools reporting using tests for these trades are presented in column one of the table below. In column two are listed the specific tests, which are used by the number of schools listed in column three, for the specific trades specified in the first column.

Table 17.--TRADES AND TESTS USED

Trades taught	Tests used by schools	No. of schools using
1. All Smith-Hughes classes.  Four schools stated all classes but did not list the trades taught.	a. California Test of Mental Maturity b. Otis Self Administering. Higher examination c. Progressive reading tests d. Cleeton Vocational Interest Inventory e. Brainerd Special Interest Inventory	1  1 1 1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	f. Bell Adjustment inventory g. Terman Test. Form A h. Otis Quick Scoring Mental Ability i. Battery of tests--(a) intelligence, (b) Muscular Coordination, (c) Mechanical Assembly.	1 1 1 1
2. Auto Mechanics  Twenty six schools reported using tests.	a. Minnesota Mechanical Assembly b. MacQuarrie Test for Mechanical Ability c. Detroit Mechanical Aptitude d. Kuhlman-Anderson Intelligence e. Herman-Nelson Intelligence f. Metropolitan Achievement (reading, arithmetic) g. Pribble-McCrory English h. Stenquist Mechanical Aptitude i. Minnesota Paper Form Board Test j. Minnesota Form Board k. O'Connor Wiggly Blocks l. Performance Tests m. O'Rourke n. Schorling-Clarke-Potter Arithmetic	1 2 9 1 5 1 1 7 5 1 1 1 1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	o. Otis p. Our Own School Tests q. Monroe Reading r. Cleveland Classification s. Otis Group Tests for IQ t. Philadelphia Mental Ability Tests u. Pressey Classification v. Pressey Verifying w. California Personality x. Color Blindness for Auto Painters y. Language Luria-Oreleans z. Pintner General Ability aa. Mathematics bb. Science cc. Bell Adjustment Inventory	1 1 1 1 3 1 2 1 1 1 1 1 1 1 1 1
3. Aeronautics  One school uses tests	a. Pressey Classification b. Bell's Adjustment Inventory c. Minnesota Paper Board Form. Series A	1 1 1
4. Aircraft Mechanics  One report received	a. Pressey Classification b. Pressey Verifying c. Minnesota Form Board	1 1 1
5. Boatbuilding	a. Stenquist Mechanical Aptitude	1



Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
6. Body and Fender Work  Five schools reported using tests	a. Cleveland Classi- fication b. Otis Group Tests of IQ c. Test for Color Blindness d. Pressey Classi- fication e. Bell Adjustment Inventory f. Minnesota Paper Board Form, Test A g. Pressey Verifi- cation h. Minnesota Form Board i. California Per- sonality j. McQuarrie Mechan- ical Aptitude	1  1  1  2  1  1  1  1  1
7. Commercial art  Four reports were received	a. Metropolitan Arith- metic grades 4-8 b. Iowa Language Skills - Advanced c. Monroe Reading d. Otis IQ e. Mathematics f. Revised Minnesota Paper Form Board g. Minnesota Form Board h. Stenquist Mechan- ical Aptitude i. Philadelphia Mental Ability j. McQuarrie Mechani- cal Aptitude	1  1  1  1  1  2  1  1  1  1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
<p>8. Cabinet Making (Woodwork)</p> <p>Eleven schools reported.</p>	<p>a. Minnesota Mechanical Assembly</p> <p>b. Minnesota Form Board</p> <p>c. Minnesota Paper Form Board</p> <p>d. Detroit Mechanical Aptitude</p> <p>e. Kuhlman-Anderson Intelligence</p> <p>f. Herman-Nelson Intelligence</p> <p>g. Metropolitan Achievement (Arithmetic and Reading)</p> <p>h. Pribble-McCrory (English)</p> <p>i. Stenquist Mechanical Aptitude</p> <p>j. Detroit Clerical and Mechanical</p> <p>k. Luria-Orleans Language</p> <p>l. McQuarrie Test for Mechanical Ability</p> <p>m. Monroe Reading</p> <p>n. Otis Group Test for IQ</p> <p>o. Philadelphia Mental Ability Test</p> <p>p. O'Connor-Wiggly Block</p> <p>q. Clapp-Young Arithmetic</p>	<p>1</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>4</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
<p>9. Cosmetology</p> <p>Five schools reported using tests</p>	<p>a. Meier Seashore Art Judgement</p> <p>b. Minnesota Paper Board Form</p> <p>c. Monroe Reading</p> <p>d. Otis IQ</p> <p>e. Mathematics</p> <p>f. Rate of Manipulation</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>





Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
14. Cafeteria  One school uses tests	a. Monroe Reading b. Otis IQ c. Mathematics	1 1 1
15. Commercial Dressmaking  Five schools reported using tests	a. Rate of Manipulation b. Spatial Relations c. IER Short Form d. Pressey Classification e. Pressey Verification f. Minnesota Paper Board Form g. California Test of Personality h. Clerical Aptitude i. Chapman-Cook Reading Test j. American Commercial Psychological and Co- operative English Tests k. Otis Intelligence l. MacQuarrie Test for Mechanical Ability m. Performance Tests n. Monroe Reading o. Mathematics	1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1
16. Child care  One report received	a. Minnesota Form Board	1
17. Dental Assistant  One school reported	a. Minnesota Paper Board Form	1

Table 17.--TRADES AND TESTS USED.--CONTINUED

Trades taught	Tests used by schools	No. of schools using
18. Electricity	a. Revised Minnesota Paper Board Form	1
Nineteen schools use tests	b. Revised Beta Examinations	1
	c. Wright's Achievement Test in Mechanical Drawing	1
	d. Bennett Mechanical Aptitude Test	1
	e. Bernreuter's Personality Inventory	1
	f. Lawshe and Montaux Industrial Training Classification Test	1
	g. Minnesota Mechanical Assembly	1
	h. Minnesota Form Board	1
	i. Minnesota Paper Form Board	5
	j. MacQuarrie Test for Mechanical Ability	3
	k. O'Connor Wiggly Blocks	1
	l. Stenquist Assembly	1
	m. Detroit Mechanical Aptitude	7
	n. Kuhlman-Anderson Intelligence	1
	o. Herman-Nelson Test for Mental Ability	2
	p. Metropolitan Achievement (Reading, Arithmetic)	1
	q. Prebble-McCrory (English)	1
	r. Stenquist Mechanical Aptitude	8
	s. Detroit Clerical	1
	t. Luria-Orleans Language	1
	u. O'Rourke	1
	v. Color Discrimination	1
	w. Pintner General Ability	1
	x. Schorling-Clark-Potter Arithmetic	1



Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	y. Pressey Classification z. Monroe Reading aa. Otis IQ bb. Mathematics cc. Otis Group Test for IQ dd. Clapp-Young Arithmetic ee. Philadelphia Mental Ability Test	1 1 3 1 1 1 1
19. Furniture Manufac- turing  One school reported	a. Drafting b. Mathematics	1 1
20. Foundry  One report received	a. Cleveland Classifi- cation b. Detroit Mechanical Aptitude	1 1
21. Furniture Finishing  One school reported	a. Pressey Classification b. Pressey Verification c. Minnesota Paper Board Form d. California Test of Personality e. Clerical Aptitude f. Chapman-Cook Reading Test g. American Commercial Psychological and Cooperative English Test	1 1 1 1 1 1 1
22. Household nursing  One school reported	a. Special dexterity b. Turning c. Finger and Tweezer Tests	1 1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
<p>23. Interior Decorating</p> <p>One school reported</p>	<p>a. Minnesota Form Board Test</p>	<p>1</p>
<p>24. Machine Shop</p> <p>Thirty schools reported using tests</p>	<p>a. Revised Minnesota Paper Form Board</p> <p>b. Revised Beta Examination</p> <p>c. Wright's Achievement Test in Mechanical Drawing</p> <p>d. Pressey Verifying</p> <p>e. Bennett's Mechanical Aptitude</p> <p>f. Bernreuter's Personality Inventory</p> <p>g. Lawshe and Montaux Industrial Training Classification Test</p> <p>h. Minnesota Mechanical Assembly</p> <p>i. Minnesota Form Board</p> <p>j. Minnesota Paper Form Board</p> <p>k. MacQuarrie Test for Mechanical Ability</p> <p>l. O'Connor Wiggly Blocks</p> <p>m. Stenquist Assembly</p> <p>n. Detroit Mechanical Ability</p> <p>o. Mathematics</p> <p>p. Stenquist Mechanical Aptitude</p> <p>q. Kuhlman-Anderson Intelligence</p> <p>r. Herman-Nelson Intelligence</p> <p>s. Metropolitan Achievement (Reading, Arithmetic)</p>	<p>3</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>3</p> <p>7</p> <p>5</p> <p>4</p> <p>1</p> <p>9</p> <p>3</p> <p>6</p> <p>1</p> <p>2</p> <p>1</p>

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	t. Pribble McCrory (English)	1
	u. Detroit Clerical	1
	v. Luria-Orleans Language	1
	w. Performance Tests	1
	x. O'Rourke	1
	y. Pintner General Ability	1
	z. Schorling-Clark-Potter Arithmetic	1
	aa. Otis IQ	1
	bb. Pressey Classification	4
	cc. A Test Battery	1
	dd. Monroe Reading	1
	ee. Otis Group Tests of IQ	3
	ff. Philadelphia Mental Ability Tests	1
	gg. Bell Adjustment Inventory	1
	hh. California Personality	2
	ii. Clerical Aptitude	1
	jj. Chapman-Cook Reading Test	1
	kk. American Council Psychological Cooperative English Test	1
	ll. Cleeton Vocational Inventory	1
	mm. Clapp-Young Arithmetic	1
25. Millinery Two schools have tests	a. Otis Intermediate Intelligence	1
	b. MacQuarrie Mechanical Ability	1
	c. Performance test in Sewing and Matching	1
26. Maritime Trades One school reported	a. Stenquist Mechanical Aptitude	1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
27. Men's Clothing Manu- facture  One report received	a. Drafting b. Sewing	1 1
28. Machine Construc- tion  One school reported	a. Stenquist's b. Bennett	1 1
29. Music-- Vocational  One report received	a. Stenquist Mechanical Aptitude b. Minnesota Paper Board Form c. Philadelphia Mental Ability	1 1 1
30. Machine Maintenance  One school has tests	a. Revised Minnesota Paper Board Form b. Revised Beta Examination c. Wright Achievement Test d. Bennett's Mechanical Aptitude e. Bernreuter's Personality f. Lawshe and Montaux Industrial Training Classification	1 1 1 1 1 1
31. Mill Work  One school reported	a. Revised Minnesota Paper Board Form b. Revised Beta Examination c. Wright Achievement Test in Mechanical Drawing	1 1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	d. Bennett's Mechanical Aptitude	1
	e. Bernreuter's Personality Inventory	1
	f. Lawshe and Montaux Industrial Training Classification	1
32. Optical Mechanic  One school has test	a. Minnesota Form Board Test	1
33. Power Machine Operator (Sewing)  Four reports were received	a. Otis Intermediate Intelligence	1
	b. MacQuarrie Mechanical Ability	2
	c. Pressey Classification Test	1
	d. Pressey Verification Test	1
	e. Minnesota Paper Board Form Test	1
	f. California Test of Personality	1
	g. Clerical Aptitude	1
	h. Chapman Cook Reading Test	1
	i. American Commercial Psychological and Cooperative English Test	1
	j. Monroe Reading	1
	k. Otis IQ	1
	l. Mathematics	1
34. Printing  Fourteen schools reported	a. Otis Higher Mental Ability	1
	b. Minnesota Mechanical Assembly	1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	c. Minnesota Form Board	1
	d. Minnesota Paper Form Board	3
	e. MacQuarrie Test for Mental Ability	2
	f. O'Connor Wiggly Blocks	2
	g. Kuhlman-Anderson Intelligence	1
	h. Herman-Nelson Intelligence	3
	i. Metropolitan Achievement (Reading, Arithmetic)	1
	j. Pribble-McCrory (English)	1
	k. Stenquist Mechanical Aptitude	1
	l. Detroit Clerical	1
	m. Luria-Orleans Language	1
	n. Detroit Mechanical Aptitude	4
	o. Color Blindness	1
	p. Finger Dexterity and Tweezers	1
	q. Pintner General Ability	1
	r. Schorling-Clark-Potter Arithmetic	1
	s. Monroe Reading	1
	t. Otis IQ	1
	u. Mathematics	1
	v. Otis Group Tests for IQ	1
	w. Pressey Classification	1
	x. Pressey Verification	1
	y. California Test for Personality	1
	z. Clerical Aptitude	1
	aa. Chapman-Cook Reading Test	1
	bb. American Commercial Psychological and Cooperation English Tests	1



Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
35. Photo Lithography  One school uses tests	a. Otis Higher Mental Ability b. MacQuarrie Mechanical Ability c. Stenquist Mechanical Ability d. Minnesota Clerical	1 1 1 1
36. Power Engineering  One school reported	a. O'Connor Wiggly Blocks b. Detroit Mechanical Aptitude	1 1
37. Pattern Making  Five schools reported using tests	a. Detroit Mechanical Aptitude b. MacQuarrie Test for Mechanical Ability c. Cleveland Classifica- tion d. O'Connor Wiggly Blocks e. Stenquist f. Clapp-Young Arithmetic	3 1 1 1 1 1
38. Painting and Decor- ating  Six schools use tests	a. Minnesota Paper Board Form b. Herman-Nelson Test of Mental Ability c. Pintner's General Ability d. Schorling-Clark-Potter Arithmetic e. Pressey Classification f. MacQuarrie Mechanical Ability g. Detroit Mechanical Aptitude h. Minnesota Form Board i. Color Discrimination j. Kuhlman-Anderson Intelligence	1 2 1 1 1 2 2 1 1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	k. Metropolitan Achievement (Reading, Arithmetic) l. Pribble McCrory (English) m. Stenquist Mechanical Aptitude n. Detroit Clerical o. Luria-Orleans Language	1 1 1 1 1
39. Plumbing  Six schools reported using tests	a. Pressey Classification b. MacQuarrie Test for Mechanical Aptitude c. Detroit Mechanical Aptitude d. Monroe Reading e. Otis IQ f. Mathematics g. Stenquist h. Minnesota Paper Board Form i. California Test of Personality j. Clerical Aptitude k. Chapman-Cook Reading Test l. American Commercial Psychological and Cooperation English Tests m. Pressey Verification	2 2 4 1 1 1 1 1 1 1 1 1 1 1
40. Motor Winding  One reported	a. Otis Group Tests for IQ	1
41. Refrigeration  Two schools reported	a. Otis Group Tests for IQ b. MacQuarrie Mechanical Aptitude Test	1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
42. Radio  Two reports received	a. Otis Group Tests for IQ b. Pressey Classification c. Bell Adjustment Inventory d. Minnesota Paper Board Form AA	1 1 1 1
43. Restuarant  One school reported using tests	a. Minnesota Paper Form Board	1
44. Sheet Metal  Ten schools reported using tests	a. Revised Minnesota Paper Form Board b. Revised Beta Examination c. Wright's Achievement Test in Mechanical Drawing d. Bennett Mechanical Aptitude e. Bernreuter's Personality Inventory f. Lawshe and Montaux Industrial Training Classification Test g. Detroit Mechanical Aptitude h. Kuhlman-Anderson Intelligence i. Herman-Nelson Intelligence j. Metropolitan Achievement (Reading, Arithmetic) k. Pribble McCrory (English) l. Stenquist Mechanical Aptitude m. Detroit Clerical n. Luria-Orleans English o. MacQuarrie Test for Mechanical Ability	2 1 1 1 1 1 1 4 1 2 1 1 2 1 1 2

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
	p. Monroe Reading q. Otis IQ r. Mathematics s. O'Connor Wiggly Blocks t. Pressey Classification u. Pressey Verification v. California Test of Personality w. Clerical Aptitude x. Chapman-Cook Reading Test y. American Commercial Psychological and Coop- eration English Test z. Color Blindness	1 1 1 1 1 1 1 1 1 1 1 1
45. Steam Engineering  One school reported	a. Stenquist b. Detroit c. Minnesota	1 1 1
46. Shoe Manufac- turing  One school has tests	a. Mathematics b. Matching Test	1 1
47. Tea Room Service  One school reported	a. Metropolitan Arithmetic Grades 4-8 b. Iowa Language Skills- Advanced	1 1
48. Tailoring  One reported	a. Minnesota Form Board	1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
49. Textiles  One school reported	a. Stenquist Mechanical Aptitude b. Minnesota Paper Form Board c. Philadelphia Mental Ability Test	1  1 1
50. Welding  Eleven schools reported	a. Revised Minnesota Paper Form Board b. Revised Beta Examination c. Wright Achievement Test in Mechanical Drawing d. Bennett Mechanical Aptitudes e. Bernreuter's Personality Inventory f. Lawshe and Montaux Industrial Training Classification Test g. Stenquist h. Detroit i. Minnesota j. MacQuarrie Test for Mechanical Ability k. Performance Test l. Otis m. Pressey Classification n. Cleveland Classifica- tion o. O'Connor Wiggly Blocks p. O'Yis Group Tests for IQ q. Bell Adjustment Inven- tory r. Pressey Verifying s. California Personality t. Mathematics u. Eyesight v. Color	3 1 1 1 1 1  1 2 5 1 3 1 1 3 1 1 1 1 1 1 1 1 1
51. Women's Garment Man- ufacturing	a. Drafting b. Sewing	1 1

Table 17.--TRADES AND TESTS USED.--Continued

Trades taught	Tests used by schools	No. of schools using
52. Women's Wear  One school reported	a. Drafting b. Sewing	1 1
53. Watch Making  One school has tests	a. Minnesota Form Board	1
54. Waitress  One report received	a. Pressey Classification b. Pressey Verification c. Minnesota Paper Form Board d. California Personality Test e. Clerical Aptitude f. Chapman-Cook Reading Test g. American Commercial Psychological and Cooperation English Test	1 1 1 1 1 1 1
55. Telegraphy  One school has tests	a. McQuarrie Mechanical Aptitude	1

Question 15 was asked in Part II of the questionnaire, in order to secure data which might be helpful to this study by securing procedures planned by trade school directors for the future.



15. What changes in your present system of entrance requirements and procedures are you contemplating and what changes will you probably make?

Of the 182 answering the questionnaire, 46 or 25 per cent stated that they are planning changes, 100 or 54 per cent reported no changes planned, and 36 or 19 per cent did not answer this question.

Some of the contemplated changes are:

- a. We plan to have tests for color blindness in Auto Painting and require students to have their books upon entrance.
- b. More careful use of present techniques.
- c. We are setting up the first two years of high school industrial arts as a pre-requisite try-out course in as many shops as possible.
- d. Would like personally to interview each student upon registration.
- e. Physical examinations for all students.
- f. Possibility of adding mechanical aptitude tests.
- g. General shop for all new students.
- h. Select students more carefully.
- i. Completion of ninth grade minimum requirement.
- j. Personal interest of applicants will be required. O'Connor Wiggly Block Tests will be given.
- k. Try out other tests which may be better than ours.

- l. More careful screening with tests before entering. Expect to raise entrance requirements one more year.
- m. An improved fitting process in our Junior High so that students will be better adjusted when they enter Vocational School.
- n. Probably raise age level so as to make it a post high school course with shorter and more intensive courses.
- o. Take students of lower level for semi-skilled trades and light manufacturing.
- p. Raise entrance requirements to completion of tenth grade for skilled trades. For less skilled type of work lower to completion of eighth grade.
- q. Closer tie-up with industry and trade leaders to correlate entrance requirements to those of the school.
- r. May have to lower standards due to present local conditions.
- s. Beginning to accept high school seniors due to war conditions.
- t. A change in the methods of testing and placing in classes.
- u. An examination and conference before admitting.
- v. Closer study of previous records.
- w. Extension of our rating ideas. Use of health examinations. Use of special tests for selection of courses.
- x. Expand present facilities. See that high school keeps and transmits files. Use general shop course for guidance.
- y. Install a testing program. Eliminate fees. Organize a try-out program.
- z. Taking high school seniors who have enough credits to graduate from the trade school by attending one semester

only.

It was realized that a study of entrance requirements and procedures might lead into a number of problems and possibilities for future study. Question 16 was asked in order to determine some of the needs for future study on this problem. Some of these suggestions are presented in the table below.

16. What further study is needed concerning this problem?

Of the 182 answering the questionnaire, 74 or 40 per cent replied with suggestions, and 108 or 59 per cent did not reply to this question. Some of the suggestions for further study of problems relative to selecting students and entrance requirements are compiled below:

- a. A national standard, not only for entrance requirements but also for the course outline and the material to be covered. This should be set up as requirements for the Smith-Hughes qualifications. That would greatly facilitate the placement of trainees because in only a very short time their standards would become known throughout the trade.
- b. Age levels at which training should begin. Length of training.
- c. An occupational survey of industry to find more about the requirements for employment.
- d. Devise tests applicable to each recognized trade.

- e. Aptitude testing-comparative records between pre-trade school performance and trade school performance and follow up after employment.
- f. Job analyses needed.
- g. What to do with misfits.
- h. Study of attitude of industry towards the selection of students. Minimum age they will consider employing trained students. Which physical handicaps they will overlook in employing trained students.
- i. Study of industrial arts programs in high school with view of expanding it and coordinating it with the trade school program.
- j. More reliable tests and time to give them.
- k. Better knowledge of what testing can do for us. More and better knowledge of the requirements of the trade from industry.
- l. Better study of correlation between mechanical aptitude tests and success in the trade.
- m. Present tendency of employers to hire at 18 raises question of the desirability of raising school entrance age to 15 with grade 9 minimum educational attainment.
- n. Standards set up in such a way that it will be necessary for local superintendents to accept them.
- o. Federal standard regulations for entrance. Various tests should be offered by the government.
- p. Possibility of having offerings on three levels.
- q. A compilation of the facts to consider in the selection of students.

- r. Study of all kinds of entrance requirements in various trades in regard to their effectiveness. Study of the success of graduates of these courses compared with those differing in entrance requirements.
- s. Make an investigation that will reveal to parents and to academic teachers what is essential before the beginning of trade instruction can be considered.
- t. A composite picture of what industry expects of the individual in each and every trade.
- u. Standardization of trade aptitude tests. Correlating tests with school achievement.
- v. Evaluation of entrance procedures.
- w. Simple objective personality rating.
- x. What to do with youth who are screened out of training for skilled jobs.
- y. Study of reasons for grade and high school teachers to guide problem students into trade schools.
- z. Suitable personal files need to be developed.

The data presented in the preceding pages are discussed fully in Chapter V.

## Chapter V

### DISCUSSION

In the preceding chapter, data from original sources were presented pertaining to the study of entrance requirements and procedures to trade schools. Such data were secured in order to supply answers to the following six minor questions:

1. What general procedures are used for admission to trade schools and classes?
2. What personal characteristics are required for admission?
3. What scholastic attainment is required for entrance?
4. What tests are students required to take for admission to school?
5. What is the nature of guidance service rendered students?
6. What tuition and registration fees are charged students?

In this chapter will be discussed the data secured from the literature on the problem as well as those secured from original sources and their application towards solving the above six minor questions and



the major question "What entrance requirements and procedures are practiced in trade schools throughout the United States which meet Smith-Hughes standards and received federal reimbursement?"

All trade school directors contributing data to this study reported that their schools qualified under the provisions of the Smith-Hughes Act and received reimbursement from federal funds. The statement from the United States Office of Education policy bulletin (10:47) regarding their question "What should be the entrance requirements to the all-day school?", is therefore of considerable importance to this study. It reads as follows:

While the minimum age of 14 is the only requirement in the Vocational Education Acts, the actual age of entrance upon a vocational training program should be regulated locally at the minimum or at such a point above this minimum as will insure that those completing this training will be mature enough to be accepted as workers in the occupation. Admission should be restricted to those physically and mentally competent to do the work and who possess the qualifications required for employment in the type of work for which the training is offered. Interest in the trade and ability to do the work should be the determining factors even after admission. A probationary period of attendance for this purpose will enable the school to determine students' real ability. While communities maintaining all-day vocational schools should offer opportunities for vocational education to all youths meeting minimum requirements who need and can profit from the instruction, care must be exercised to prevent training too many in any particular field of work.

The quotation cited above automatically does

the following:

1. Establishes the minimum age at 14 years.
2. Makes it necessary for those admitted to classes to pass the qualifications required for employment in the trade for which they are being trained.
3. Requires those admitted to classes to be both mentally and physically competent to profit from the instruction offered.
4. Advises raising the entrance age, when deemed necessary, to meet employment conditions.
5. Advises the establishment of probationary periods in schools to determine students' abilities to profit from the instruction offered.
6. Advises against training too many in any one field.

With the exception of the definite establishment of the minimum entrance age of 14, the federal policy is rather broad and leaves much to the judgment of the local school authorities offering vocational training. This is particularly true in regards to methods which might be used to accomplish the procedures listed above.

The 182 trade school directors contributing data to this study varied considerably in the procedures

and requirements they have instituted to meet the policy regarding the admittance of students to trade classes as established by the United States Office of Education policy bulletin. Of these 182 school directors, 162 or 89 per cent stated that they believed that there should be selection of students for trade classes while 17 or 9 per cent reported that there should be no selection, and 11 failed to express opinions.

Bartlow (1), Graves (6), Whitesell (12) and Clark (3) all indicate, in the reports of their studies, need for student selection. Clark, (3:22-49) reports that 30 Wisconsin trade school directors think that there should be student selection while four of the directors do not think that there should be selection of students for trade schools and classes.

The application of data to each of the minor questions is discussed in the following sections.

Section I.--What general procedures are used for admission to trade schools and classes? (Data from the questionnaire are tabulated in Table 3.)

Although 23 per cent of the schools represented in this study favored allowing anyone to enter who desire, the majority, 76 per cent, does not agree with such policy. The experience of school directors in using such procedure indicates that it is not a

good one. Interest in wanting to learn a trade is generally conceded to be of primary importance but this study indicated that many are interested who are not mentally or physically competent to profit from instruction.

The recommendation of students for trade classes by trade or occupational committees, which Wright and Allen (13:49) stress as being an important procedure, was not found to be in general use. Only three trade school directors reported using this procedure. Two had tried it and discarded it. Their experience would indicate that this procedure might be one for further consideration and experimentation.

A large majority of directors favored the approximation of school entrance requirements to those used by employers in the trade. Of those reporting, 38 per cent are now using such a plan. The value of this procedure is emphasized by the United States Office of Education (10:47) and by Graves (6:81).

The possession of books and personal equipment to be in the hands of students at time of admission was required by only 7 per cent of the school directors reporting and was not considered by them to be of great importance. This requirement and evaluation may, however, be due to the fact that 48 per cent of those reporting stated that they furnish all books and needed equipment to students without cost. Such action would

indicate the importance of this requirement.

Trade advisory committees are organized by 50 per cent of the trade school directors reporting. A large majority of them feel that such committees are of great importance. Such valuation indicates the usefulness of this procedure.

Slightly less than one-half of the school directors reporting limit the number of students in classes to employment possibilities. Over one-half of them report that in their opinion this should be done. The officials of the United States Office of Education (10:47) advises that "care must be exercised to prevent training too many people in any particular field of work." Conditions are now, however, different than in peace time and may have influenced the answers of those reporting.

Section II.--What personal characteristics are required for admission? (Data from the questionnaire are tabulated in Table 4.)

Of the trade school directors reporting in this study, two admit students under 14 years while some have set the entrance age at 18 years. In the majority of the schools, the entrance age requirements were centered around 14, 15 and 16 years. The general tendency, as reported, is to raise the entrance age



requirement above the 14 year minimum requirement established by the federal act. In the bulletin of the United States Office of Education (10:47) suggestion is made that the minimum age be set so that when the boy finishes his training he will meet the age at which employers will hire him. This age may vary considerably in different trades and in different areas of the United States.

According to the schools reporting, more weight is given to a student's personality than to his appearance. Replies were evenly divided regarding the use of personality as an entrance requirement, with 40 per cent reporting the use of trade standards of appearance as one of their entrance requirements while 59 per cent pay little or no attention to personal appearance.

Of the schools reporting, 73 per cent state that they make some attempt to determine the personality of students while 10 per cent report no effort directed towards personality as a school entrance requirement.

Sixty-six of the replies from school directors list standards which have been established in their schools regarding appearance, varying from "clean and neat, even if clothes are old" to "highest degree of cleanliness required, clean spotless uniform daily,



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shave, bath and physical inspection before work begins".

The studies of Cox (5) and Cleeton (4) indicate that employers pay a great deal of attention to the matter of personality and appearance. Brewer, according to Cox, found that approximately 62 per cent of 4174 cases of discharged employees lost their jobs because of personal characteristics. This study indicates that training will be ineffective if those trained cannot hold a job because of some undesirable "personal characteristic". Clark (2:22-49) states that 42 per cent of the Wisconsin directors of trade schools use personality tests for guidance purposes and of these, 33 per cent rate them high, 47 per cent rate them of medium value, 13 per cent rate them low, and 58 per cent do not use them.

It seems to be true that some personal characteristics may be overcome, because of the student "finding himself" and becoming interested upon entering a trade class. However, personal characteristics, with other qualifications, should be taken into consideration when the student is being considered for trade school entrance.

Consideration of the data received and studies made indicates that appearance and personality are important characteristics and, with the exception of a few cases, can be developed after students enter school.

Training will be largely ineffective if students cannot secure or hold a job because of some undesirable personal characteristic.

The physical condition of persons entering trade schools was considered by a large majority of school directors as of great importance, 81 per cent reporting good physical condition as a requirement of admission to their schools while 17 per cent reported it as not a part of their admission requirements. Of the 120 schools reporting on who pays the cost of physical examinations, 111 stated that there are no costs to the students for such examinations, and that the school or some other agency pays for them. Graves (6:81), in his final recommendations, lists the requirement that "all vocational students before being officially enrolled should be given a physical examination by school doctors". Clark (3:22-49) found in his study that 57 per cent of the Wisconsin vocational school directors use physical records of students as counseling aids. Of these, 63 per cent rate such procedure high, 19 per cent rate it of medium value, 9 per cent rate it of low value, and 41 per cent do not use this aid.

The data secured by this study, including the studies and conclusions of others, indicate that a physical examination might be one of the most important

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of trade school entrance requirements.

Students' intelligence quotients (IQ) and educational quotients (EQ) are given careful consideration in admitting students to trade classes, according to 60 per cent of the trade school directors reporting, but are not considered by 39 per cent of them. This procedure was rated high value by all reporting. A few mental tests were reported in use but not enough to arrive at any conclusions as to their value in admitting students who are mentally able to profit from the instruction offered in trade classes, according to the requirement of the federal vocational act. Clark (3:22-49) reports that 64 per cent of Wisconsin trade school directors rely upon the intelligence quotient as an aid to counseling. Of those who use it, 41 per cent rate it high value, 48 per cent rate it medium value and 4 per cent rate it low. Thirty per cent of the schools do not use it. Clark further states (3:22-49) that 27 of the school directors reported, that according to their experience, boys with a high IQ succeed more readily in trade classes than those with a low IQ. Six of the Wisconsin trade school directors did not think this true.

The majority of persons contributing to this study report that high mentality is necessary for success in trade training and that they require such for

admission to classes. There is difference of opinion, however, whether present academic mental tests measure the kind of mentality necessary for success in mechanical trades.

Section III.--What scholastic attainment is required for entrance? (Data from the questionnaire are tabulated in Table 5.)

Of the 170 school directors reporting on scholastic attainment as being a means of accepting or rejecting students to trade classes, 12 or about 7 per cent do not consider such procedure. The minimum requirements of the other schools vary from the fifth grade graduate to graduates from high school. The majority of the directors or about 55 per cent requires graduation from grade school. The next largest group, approximately 13 per cent, requires graduation from the ninth grade. This study would indicate that graduation from grammar school, providing students are 14 years old, might be set as the minimum entrance requirement to trade classes.

While about 47 per cent of the school directors reporting state that they will admit school failures, 74 per cent require medium quality school grades, 8 per cent require high quality grades and 13 per cent give no consideration to the quality of school

grades.

Clark (3:22-49) reports from his study that 72 per cent of the Wisconsin trade school directors rely upon the boy's academic school records as a means of guidance and that one third of them rate this aid high.

From the data collected, it would appear that average scholastic attainment might well be considered an entrance requirement and that a good background in mathematics is essential.

Section IV.--What tests are students required to take for admission to school? (Data from the questionnaire are tabulated in Table 6)

Required entrance examinations to trade schools and classes, were reported by approximately 19 per cent of the schools' directors answering this question while 80 per cent stated that they do not use them. These replies would indicate that entrance examinations should not be required for admission to trade schools and classes.

Aptitude tests were reported in use by approximately 38 per cent of the trade schools represented in this study and were not being used by 61 per cent. Students are assigned to classes or rejected upon the results of these tests, according to 33 per cent, and not so assigned by approximately 66 per cent

of the schools reporting. Aptitude tests are rated highly by the school directors reporting. Clark (3:22-49) gives the number of Wisconsin trade schools using various aptitude tests and their ratings of them. His recommendations are:

The writer recommends that a counselor use a battery of records and tests over a period of years in order to prove that it will or will not materially aid in the selection of a boy for a job.

It is recommended that men, experienced in the handling of tests, be subsidized, perhaps by the State Board, to perfect tests to be used in the fields mentioned in this study. The purpose would be to so design the tests, that they would narrow the field of vocational direction and point toward a single vocation and would thus facilitate the work of the counselor and speed the training of the student.

Kent's study (7) of selecting students for trade classes resulted in the conclusion that the tests used did not measure all the factors influencing success and failure but did give a 78 per cent prediction of those studied. The tests used were:

Stenquist Test for Mechanical Ability I and II

Stenquist Test for Mechanical Assembly

Otis Self Administering Test

MacQuarrie Test for Mechanical Ability

Brewer (2) mentions that tests are being developed to assist in the estimation of the probability of success in the trades for which one is being trained.



Kitson (8) in his article, Does Mechanical Aptitude Exist? states that there is such a thing as aptitude because it is evident that some persons readily adapt themselves to activities requiring mechanical ability while others do not. He infers that there may be some way of finding out those who can or cannot readily adapt themselves before they enter training.

Van Oot (11) in his study of the validity of entrance procedures used by the Norfolk Shipyards in selecting apprentices and adapting such procedure to the selecting of boys for trade schools found them of little value. The table of correlations, as compiled, shows that such traits measured by the Otis Intelligence Test, The O'Connor Wiggly Block Test, The Minnesota Paper Form Board Test and the Thurstone Personality Schedule Test on one hand and such factors as the age of the student above 16, the amount of schooling and similar traits have no relationship to actual mechanical ability as measured by standard performance of skilled mechanics.

Clark (3:22-49) states the reactions of Wisconsin school directors to the following nine tests:

1. The Otis Self-Administering Test for General Intelligence.
2. Stenquist test of Mechanical Ability I.
3. The Detroit Mechanical Aptitude Test for Boys.

4. The Minnesota Form Board Test A and B.
5. The Stenquist Test of Mechanical Ability II.
6. The Minnesota Spatial Relations Test.
7. Stenquist Assembly Test for Mechanical Ability.
8. The MacQuarrie Test for Mechanical Ability.
9. The Minnesota Assembly Tests.

A large percentage of the schools included in this study do not use the above tests. Some tests were rated high and some low by those who do use them. Since few used them and their opinions were so varied, no conclusions could be drawn from their reports.

In answer to question 16, Part Two of the questionnaire, some of the suggestions made concerning the need for further study of entrance requirements and procedures to trade schools and classes are:

1. More reliable tests and time to give them.
2. Better knowledge of what testing can do for us. More and better knowledge of the requirements of the trade from industry.
3. Devise tests directly applicable to the trade.
4. Better study of correlation between mechanical aptitude tests and success in the trade.
5. Federal standard regulations for entrance. Various tests should be offered by the government.
6. Standardization of trade aptitude tests. Correlating tests with school achievement.
7. Simple objective personality rating.

After a careful study of the data assembled

in this thesis and the literature on the subject, it would appear that while some trade school officials are pleased with the results they are obtaining in the use of tests in admitting students to trade classes, there is still much to learn about tests and testing, and that there remains a reasonable doubt as to their effectiveness for such use.

Section V.--What is the nature of guidance service rendered students? (Data from the questionnaire are tabulated in Table 7.)

Of the 168 schools reporting on guidance procedures in admitting students to trade classes, 89 per cent reported some kind of counseling interview. Such interviews involved the meeting of students with regular school counselors, with the principal, the trade instructor, the department head, or various combinations of these persons, before being admitted to classes, and 10 per cent reported admitting new students without any counseling or guidance.

Wright and Allen (13:49) list counseling as one of their important entrance requirements. Clark's whole study (3) is on the various phases of guidance based upon tests. He states (3:22-49) that 30 Wisconsin trade school directors agree that there is need for guidance to deter a boy from entering training for which he has little or no aptitude. None of the directors reported to the contrary.

The data reviewed in the present study point to the need for interviewing and counseling students before they are enrolled. The greatest number of directors reporting on counseling procedures favored the trade class instructor and the principal as being the two who should interview and counsel students on or before entrance to trade classes.

The enrollment of new students on probation as part of the entrance procedure, was well thought of by the respondents to the questionnaire. They list this period as varying from two weeks to ten months. The greatest number of school directors listed six weeks as the length of their probationary periods. The two next largest groups, each having the same number of schools, list two weeks and three months respectfully. Approximately 52 per cent of the directors agree that students should be enrolled but on probation.

The above mentioned reactions to this procedure indicate a slight advantage to the requirement that students should enter trade classes on probation. Such procedure might well apply to problem students and be of some assistance to the directors who reported that they are required to admit all students who apply for admission to their schools. Other directors report that problem cases often prove to be successful investments;

however, they admit them only on probation.

The use of tryout courses or general shop classes for new students so they can secure experience in the trades taught in the school, in order to select the one they like best, was reported in use by 56 schools or 31 per cent of the schools reporting. Clark (3:22-49) states that all Wisconsin trade school directors responding to his study reported that such courses have value. A number of the respondents to the present study state that, in their opinions, the place for tryout courses is in the Junior and Senior High Schools. The purpose of the trade school is to teach as much of the trade as possible in the short time available. Trade training is too expensive to use for tryout purposes and because of the limited facilities, it would be unjust to use the trade school for tryout courses if suitable persons are ready and waiting to receive real training.

The data gathered in this study indicate that the place for tryout courses, unless there are adequate facilities, is in places other than the trade school.

Section VI.--What tuition and registration fees are charged students? (Data from the questionnaire are tabulated in Tables 8 and 9.)

Of the 171 schools reporting on this subject, 153 or 89 per cent state that they do not charge tuition fees. The range of fees charged by the other 18 schools

vary considerably, from \$ .50 to \$150.00. Special fees for those entering from outside the state or school district range from \$1.50 to \$250.00 per year. The amount charged by the greatest number of schools for regular students was \$2.00 per year, for those entering from outside the school district, \$150.00 and for those entering from outside the state, \$120.00. Students from outside the state are not admitted in 14 schools.

The fact that so large a number of schools, 153 out of 177 or approximately 89 per cent, do not charge entrance fees, should be considered carefully by any trade school director when planning this part of the entrance requirement procedures to his school.

Additional data of a subjective nature, pertaining to this present study on entrance requirements and procedures to trade schools, were secured by questions 15 and 16 of Part Two of the questionnaire and are listed in detail in Chapter IV. Replies to question 15, "What changes in your present system of entrance requirements are you contemplating?", show interest and activity in improving entrance requirements and procedures and the answers indicate that trade school directors are giving active attention to the following mentioned activities: tryout courses, interviews, physical examinations, aptitude tests, selection of



students, elementary school attainment, raising entrance requirements, use of Junior High School for pre-vocational work, raising entrance age requirements, closer attention to needs of industry, closer attention to previous school records and record keeping, and the elimination of fees.

Replies to question 16, "What further study is needed concerning this problem?", indicate the need for further study in: the development of national standards of entrance requirements to trade classes, age levels at which training should begin and length of training necessary, uniform aptitude tests for all trades, what to do with misfits and with persons who are refused admittance to trade classes, occupations in which physically handicapped persons can succeed, the coordination of industrial arts with trade school programs, correlation of mechanical aptitude testing and success in the trades, government participation in testing activities, simple objective personality ratings, and the development of suitable and adequate records.

### Implications

From the discussion of the data pertaining to entrance requirements and procedures to trade schools and classes, the following conclusions are made relative to each of the minor questions:

Question I.--"What general procedures are used for admission to trade schools and classes?"

1. Trade schools and classes should not be open to anyone who wishes to enter, without some procedure being utilized to determine whether the individual can profit from the instruction offered. Approximate entrance requirement standards should be established comparable to those used in industry.
2. Text books and needed personal equipment should be supplied, free of charge, to students at time of entrance.
3. Trade advisory committees should be utilized and their advice considered in regard to numbers to be trained for any one trade.

Question 2.--"What personal characteristics are required for admission?"

1. The minimum age for trade school entrance should be such that when students finish their training they will be of an employable age. In no case should it be less than 14 years.
2. Physical examinations should be required and should be paid for by the school officials. Only persons who are physically able and mentally fit to profit from the instruction

offered should be admitted.

Question 3.--"What scholastic attainment is required for entrance?"

1. Graduation from grammar school, providing students are 14 years of age, should be established as a minimum entrance requirement.

Question 4.--"What tests are students required to take for admission to school?"

1. Experimentation in the use of various tests should be encouraged but until they are further developed and proved reliable, they should not be depended upon too much as an efficient entrance requirement.

Question 5.--"What is the nature of guidance service rendered students?"

1. All students should be interviewed and counseled, at time of entrance, by both the director of the school and the respective trade instructor.
2. All students should understand that they are enrolled on probation, subject to their showing evidence of ability and success in their school work.
3. The place of tryout courses is not in the trade school.

Question 6.--"What tuition and registration fees

are charged students?"

1. Tuition or registration fees should not be charged students.

Recommendations to the superintendent  
of the Arizona Vocational School

Based upon the findings gained from the study of the entrance requirements and procedures in used by 182 vocational schools in the United States the following recommendations are made for use in the Arizona Vocational School.

A. General Procedure

1. Entrance requirements should include those used by employers in the respective trades for which instruction is given.
2. Books and personal equipment should be in the students' possession before being admitted to classes. Provision should be made for needy persons to be provided with such instruction material.
3. Trade advisory committees should be organized for specific classes.
4. The number of students in training should be regulated according to placement possibilities.
5. Written applications for entrance should be required.

## B. Personal Characteristics

1. The minimum entrance age should be 14 years or such that upon graduation, students will meet employment age requirements.
2. There should be no maximum age unless training facilities are inadequate, in which case, the employment practice used in the trade, regarding maximum age, should be followed.
3. Problem cases should be admitted upon probation providing training facilities are available.
4. Personality qualifications should be established to conform to trade requirements.
5. Nationality should be considered according to trade custom.
6. A physical examination should be required of every entrant. This examination should be conducted by a medical doctor and the cost borne by the school.
7. Intelligence should govern admission according to trade practice. Aptitude requirements for each trade taught should be determined and procedures should be

established to determine such attainment.

8. The students' IQ and EQ should be given careful consideration in admitting them to classes.

#### C. Scholastic Attainment

1. Graduation from grammar school, except in special adult cases, should be established as the minimum of scholastic attainment.
2. School grades required should be average or better.
3. School grade records from the last school attended should be required and reviewed before students are admitted.
4. Personal records from the last school attended should be required.
5. Students' aptitudes in pre-vocational and tryout classes should be given careful consideration before admitting them to trade classes.
6. Opinions of industrial arts teachers of students' interests and aptitudes should be given careful consideration in admitting students.

#### D. Tests

1. Suitable aptitude tests should be given.



2. Special tests designed to determine the student's possession of certain abilities needed in the trade, such as hearing, color blindness, and sight, should be given.
3. Students should not be assigned to classes or rejected upon the results of tests given until reliability and validity in their use have been established.

#### E. Guidance

1. All students should be interviewed and counseled before being admitted; this should preferably be done by the trade teacher and the school director or school counselor, if one is available.
2. All students should be enrolled on probation for a six week's period.
3. If facilities are available, part of the day in each shop might be devoted to try-out classes. Otherwise a general shop should be organized for those who are not sure of what they want to learn. A better procedure would be to organize such a program in the local high school and closely coordinate it with the trade school.

#### F. Tuition and Registration Fees

1. There should be no tuition or registration fees charged those who are residents of the state.
2. Special fees should be charged those who are non-residents of the state.
3. No special fees should be charged to cover supplies and materials used.
4. No deposits should be charged for breakage or loss.

When the entrance requirements and procedures have finally been determined, they should be checked and approved by the respective trade committees and employer groups.

#### Limitations of this study

Although this research study succeeded in securing, tabulating and evaluating much data pertaining to the problem of entrance requirements and procedures to trade schools and classes, not found in any other study, it could have been more complete had the following been accomplished:

1. Personal interviews with trade school directors, at which time the questionnaires could be discussed and completed, would have been more effective and would have assured answers to all questions. Such procedure was

impractical because of the spread of the schools.

2. Although most of the trade schools selected for this study were suggested by the state directors of vocational education throughout the country, a large number were secured from the publication of the United States Office of Education, Directory of Federally Aided All-Day Trade and Industrial Education Programs, without any particular reason except to secure representation from all states. Had a more careful selection been made, the results of the study might have been more complete and helpful to those concerned.
3. Incomplete information received in the questionnaires made it impractical to use the criteria developed for evaluation of the data after compilation in Tables 3, 4, 5, 6, 7, 8 and 9, Chapter IV. It therefore became necessary to develop a new criterion. This new criterion was not of a scientific nature but it did seem to fit the purpose and meet the needs of the study.
4. It was planned to have representation from all the states in the Union in this study, but follow up letters to those directors failing

to answer the questionnaires failed to secure this objective.

Additional studies needed

During the conduction of this study and writing of the thesis, considerable thought was directed towards helpful studies which might be made pertaining to this problem. Some suggested ones are:

1. Possibility of definite, uniform entrance requirements to federally aided trade schools and classes.
2. A program for caring for misfits and for those rejected from regular trade classes.
3. The coordination of industrial arts programs with trade training programs.
4. The development and coordination of pre-vocational and tryout courses with trade training programs.
5. A study to determine the effect of World War II upon entrance requirements and procedures to trade schools and classes.
6. A program to determine and regulate the number of persons who should be trained for industry.

## Chapter VI

### SUMMARY

This problem is limited to a study of entrance requirements and procedures now in use in 182 trade schools throughout the United States, with a recommendation to the Superintendent of the Arizona Vocational School, Phoenix, Arizona.

The problem arose through the difficulty experienced by the officials of the Arizona Vocational School of having large numbers of students quit school each year for various reasons. Through discussing this situation with directors of other trade schools, it was found that they were also experiencing similar problems and that they felt that the situation could be remedied considerably through the establishment of entrance requirements and procedures which would assist in admitting students who could and would profit from the training offered.

As a result of this need the problem of What entrance requirements and procedures are practiced in trade schools throughout the United States which meet Smith-Hughes standards and receive federal reimbursement, was evolved. An analysis of this major problem

resulted in the following six minor questions:

1. What general procedures are used for admission to trade schools and classes?
2. What personal characteristics are required for admission?
3. What scholastic attainment is required for entrance?
4. What tests are students required to take for admission to school?
5. What is the nature of guidance service rendered students?
6. What tuition and registration fees are charged students?

In order to secure answers to the above minor questions, it was first necessary to review the literature pertinent to the problem, and then to secure additional information from original sources, which were the directors of trade schools, supervisors of industrial education, and industrial teacher trainers throughout the country. Letters were sent to these educators asking them to submit questions, pertaining to entrance requirements and procedures to trade schools and classes, which they would like to have answered in a study of this nature. Personal contacts were made with many of these school officials. From these sources and from the needs experienced by the



officials of the Arizona Vocational School, a questionnaire was developed.

These questionnaires were sent to 286 trade school directors throughout the United States, and 182 of the directors responded. From the data received in answer to these questionnaires, the following findings were considered as being of most importance

Question 1.--"What general procedures are used for admission to trade schools and classes?"

- (1) Seventy-six per cent of the school directors reporting state that interest alone is not sufficient to allow a student to enter a trade class.
- (2) Only a few schools reporting require students to be recommended by trade or occupational committees.
- (3) A large majority of directors favor the approximation of school entrance requirements to those used by employers in the trade.
- (4) About one-half of the schools furnish students all books and needed equipment.
- (5) Trade advisory committees are organized by one-half of the school directors reporting. They rate the use of such committees as of highest importance.
- (6) Slightly less than one-half of the school

directors reporting, limit the number of students in classes to employment possibilities. Over one-half of them favor this.

Question 2.--"What personal characteristics are required for admission?"

- (1) There is a general tendency to raise the entrance age requirement so that when students finish training they will be of an employable age. Entrance ages vary with the requirements of different trades.
- (2) One-half of the schools use some standard of personality as an entrance requirement. Almost all indicate the importance of appearance and personality characteristics but think that, with the exception of a few cases, these characteristics can be developed after enrollment.
- (3) A physical examination is indicated as one of the most important entrance requirements, and is being required by 81 per cent of the school directors reporting.
- (4) A majority of the directors report that high intelligence is necessary for success in trade training and that they require such for admission to their trade classes. There is a difference in opinion; however, as to

whether present academic tests measure the kind of intelligence necessary for success in mechanical trades.

Question 3.--"What scholastic attainment is required for entrance?"

- (1) The data collected indicate that graduation from grammar school, providing students are 14 years of age, might be established as a minimum entrance requirement.

Question 4.--"What tests are students required to take for admission to school?"

- (1) Entrance examinations and tests are required by 19 per cent of the directors reporting. A great variety of tests was used with varying degrees of success, including aptitude, mechanical, intelligence and personality types.

Question 5.--"What is the nature of guidance service rendered students?"

- (1) The data received point to the need for interviewing and counseling students before they are enrolled. The greatest number of directors favor the trade class instructor and the principal as being the ones who should interview and counsel new students.
- (2) Enrolling new students, on probation, was

approved by over one-half of the directors reporting.

- (3) The trade school should not include try-out courses unless there are adequate facilities.

Question 6.--"What tuition and registration fees are charged students?"

- (1) In 89 per cent of the schools there is no tuition or registration fee. In 11 per cent of the schools the fees vary from \$1.50 to \$250.00 per year.

### Limitations

Certain limitations were found to impede this study, chief of which was that more detailed and complete results would have been obtained through personal visits to each of the 286 school directors to whom the questionnaires were sent. This study was made prior to 1941 which excludes practices which may have become effective in these schools between that date and the present, 1946.

### Implications

Through the consideration and evaluation of the data received, the following observation is made: There is need for entrance requirements and procedures to trade schools and classes in order that effective instruction may be given the trainees which will

assure them of a greater chance for success upon graduation and entrance upon employment.

The foregoing implications were based on data gathered before 1941. If additional data had been gathered between 1941-46, the findings of this study might have been changed.

## A P P E N D I X



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Form 1.--LETTER TO STATE DIRECTORS  
OF VOCATIONAL EDUCATION AND TO  
SOME DIRECTORS OF VOCATIONAL  
SCHOOLS

November 25, 1939

Dear Fellow-Worker:

I am making a study of entrance requirements and procedures used in various trade schools in admitting students to day trade classes.

We all realize the need for selecting students for trade training both for their own good as well as for the effective use of public funds for training purposes. We are more or less in accord with Wright and Allus' statement: "A program for Vocational Education is efficient in proportion as it provides an efficient agency for the selection of students to be admitted into specific training courses."

If you will kindly list some things which you would like to know pertaining to this important procedure, I will be glad to include them as a part of my study and, if you wish, will send you a digest of entrance procedures used in selecting trade class students throughout the country.

Please list the procedure concerning which you would like information on this sheet. If more space is needed, write on the back. I would also appreciate a list of trade schools or classes in your state to which I can write for information concerning procedures which they use.

Thanks for this cooperation which I hope will be for our material benefit.

Sincerely yours,

GEO. S. SANDERS  
DIRECTOR  
ARIZONA VOCATIONAL SCHOOL

GSS:KR

Things I would Like To Know About Entrance procedures trade schools are using.	Names and Addresses of Trade Schools or Classes in My State.

Form 2.--QUESTIONNAIRE USED  
FOR SECURING DATA

TO DAY-TRADE CLASSESPART 1

If different requirements and procedures are desirable or necessary for different classes, fill out a questionnaire for each class.

SCHOOL \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_

This questionnaire is for all classes. Yes \_\_\_\_\_ No \_\_\_\_\_

This questionnaire is only for the \_\_\_\_\_ class.

This class meets Smith-Hughes standards. Yes \_\_\_\_\_ No \_\_\_\_\_

This class is reimbursed from Federal Funds. Yes \_\_\_\_\_ No \_\_\_\_\_

Please check each statement in the spaces provided at the left.

Yes - If you use the procedure now, check in this space.

No - If you do not use the procedure now, check in this space.

A - If you have used the procedure **but** are not using it now, write in Column A the number of years you used it before discarding it.

B - If you are using the procedure now, write in Column B the number of years you have used it.

C - In Column C, rate all procedures. Rate 1 for those you consider of least value up to 10 for those you consider of greatest value.

If you use other procedures or requirements, list them in the blank spaces.

A	B	C	Yes	No	GENERAL PROCEDURE
					1. Any student who desires to enter the class is admitted.
					2. Students are admitted only with parents' request or consent.
					3. Students must be recommended by an employer who is engaged in the trade for which the student desires to train.
					4. Students must be recommended by a trade committee.
					5. Students must be recommended by a school official.
					6. Entrance requirements included those in use by employers in the trade.
					7. Written applications for entrance are required.
					8. Books and personal equipment must be in student's possession before being admitted to classes.
					9. Trade advisory committees are organized for specific classes.
					10. A general trade advisory committee is organized for the school.
					11. The number in a class is limited according to placement possibilities.
					12.
					13.



A	B	C	Yes	No	PERSONAL CHARACTERISTICS
					14. The minimum entrance age is _____ years.
					15. The maximum entrance age is _____ years.
					16. Problem cases are admitted _____. Are not admitted. _____. Are admitted on probation _____. (Check one)
					17. Personality governs admission according to trade standards.
					18. Appearance governs admission according to trade standards.
					19. Nationality governs admission according to trade practice.
					20. Physical condition governs admission according to trade practice.
					21. Mentality governs admission according to trade practice.
					22. A physical examination is required _____. Is not required _____.
					23. The student's I.Q. and E.Q. are given careful consideration in admitting them to the trade class.
					24.
					25.
					SCHOLASTIC ATTAINMENT
					26. REQUIREMENTS, Grammar Grade Grad. _____ H.S. Grad. _____ Previous schooling not considered _____
					27. QUALITY OF SCHOOL GRADES REQUIRED. High _____ Average _____ <del>Will take failures</del> <del>Not considered</del>
					28. SCHOOL GRADE RECORDS REQUIRED. From grades _____ <del>From High School</del> <del>From College</del>
					29. Personal records from other schools are required.
					30. Previous training or experience is required for entrance.
					31. The students aptitude in pre-vocational classes is given careful consideration in admitting him.
					32. Opinions of Industrial Arts teachers are given careful consideration in selecting and admitting students.
					33. Good grades in mathematics and science are considered basic and necessary.
					34.
					35.
					TESTS
					36. Entrance examinations are required.
					37. Aptitude tests are given before admission.
					38. Performance tests are given before admission.



Entrance Requirements & Procedures  
To Day-Trade Classes

-3-

Part 1

A	B	C	Yes	No	TESTS (Cont.)
					39. Special tests such as for hearing, color blindness, etc. are given before admission.
					40. Students are assigned to classes or rejected upon the results of these tests.
					41.
					42.
					GUIDANCE
					43. All students are interviewed and counselled before being admitted or shortly thereafter. Interview is by: Trade teacher: _____, Counselor: _____ Principal: _____
					44. Students are assigned to the classes for which they register, without counselling interview.
					45. Students are enrolled in trade classes on probation. This period of probation is _____ weeks, _____ months.
					46. Students are put in try-out courses or general shop classes to secure experience in the trades taught in the school so they can select the one they like best. This try-out period is _____ weeks, _____ months.
					47. Students take a special course in guidance as part of their program of studies.
					48.
					49.
					TUITION AND REGISTRATION FEES
					50. A tuition or registration fee is charged. Amount _____
					51. A special fee is charged for those who come from outside the school district. Amount within the state _____. From out of state _____.
					52. The fees mentioned in 51, are partially or wholly returnable.
					53. Special fees to cover supplies and materials used are charged in such classes as welding, painting, cooking, etc.
					54. Deposits for breakage, loss, etc., are charged in certain departments.
					55.
					56.

ENTRANCE REQUIREMENTS AND PROCEDURES  
TO DAY-TRADE CLASSES

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PART 2.

Please answer the following questions briefly. If necessary, use back of paper or another blank sheet.

1. List the trade classes which you have in your school.

(1)	(8)
(2)	(9)
(3)	(10)
(4)	(11)
(5)	(12)
(6)	(13)
(7)	(14)

2. Do you think there should be a selection of students for trade class instruction? Yes \_\_\_\_\_ No \_\_\_\_\_  
Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Do you think that the entrance requirements should approximate those which govern an employer when he hires an apprentice? Yes \_\_\_\_\_  
No \_\_\_\_\_

4. Do you think that enrollment in classes should be limited to employment possibilities? Yes \_\_\_\_\_ No \_\_\_\_\_  
Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. How do you determine this number to receive training? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. What is done with applicants who for one reason or other are rejected by your school? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. What do you do with those who insist on enrolling and whose parents also insist that they should enter the trade class, but who do not meet your entrance requirements? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Who registers the students? \_\_\_\_\_  
\_\_\_\_\_
9. What provisions do you have for those who, because of lack of funds, cannot purchase books and equipment nor pay fees? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. How do you determine a student's personality? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
11. What standards have you set up for students' appearance? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
12. How do you determine a students' physical condition? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
13. (a) What is the extent of physical examinations given? (b) Who gives them? (c) Who pays the cost? (d) Frequency?  
a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_
14. Which trades require special tests for applicants? What tests do you use? Degree of value? \_\_\_\_\_

[illegible]

15. What changes in your present system of entrance requirements and procedures are you contemplating making and what changes will you probably make? \_\_\_\_\_

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16. What further study is needed concerning this problem? \_\_\_\_\_

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NOTE: It is important that all questions be answered. Kindly go over your replies and see if you have checked or answered all of them. Thank you for the time spent in answering this questionnaire. Do you wish a summary of this study?

Sincerely,

GEORGE S. SANDERS

Form 3.--LETTER TO VOCATIONAL  
SCHOOL DIRECTORS.

The Principal

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Dear Sir:

Will you please fill out the enclosed sheets pertaining to entrance requirements and procedures to trade classes in your school and return them to me at the U. S. Office of Education, Washington, D. C. Thanks.

Pardon a letter in this form. I am at present out of the office and engaged in field work.

Sincerely yours

---

George S. Sanders



Exhibit 1.--LIST OF THE VOCATIONAL  
SCHOOLS RESPONDING TO THE  
QUESTIONNAIRE

**Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE**

State	City	School
ALABAMA	1. Mobile	Murphy High School
	2. Birmingham	Paul Hayne
	<u>One school</u> did not answer the questionnaire.	
ARIZONA	3. Phoenix	Arizona Vocational School
	4. Yuma	Yuma Union High School
	5. Mesa	Mesa Union High School
	6. Holbrook	Holbrook High School
	7. Benson	Benson Union High School
	8. Clifton	Clifton High School
	9. Morenci	Morenci High School
ARKANSAS	10. Fort Smith	Fort Smith Senior High
	11. Little Rock	school
		Little Rock High School
CALIFORNIA	12. San Jose	San Jose Technical High
		school
	13. Los Angeles	Francis Polytechnic Senior
		High School
	14. Los Angeles	Frank Wiggins Trade School
	15. Los Angeles	Francis Polytechnic Junior
		High School
	16. Taft	Taft Union High and Junior
		College
	17. Riverside	Riverside Polytechnic
		Senior High School
	18. Alameda	Alameda High School
	19. Stockton	Vocational Department
	20. Oakland	Central Trade School
	21. San	Samuel Gompers Trade School
	Francisco	
	22. Santa	Santa Monica Technical
	Monica	School
	<u>Four schools</u> did not answer the questionnaire	
COLORADO	23. Pueblo	Centennial High School
	24. Boulder	Boulder High School
	<u>One school</u> did not answer the questionnaire.	
CONNECTICUT	25. Meriden	Meriden State Trade School
	26. Willimantic	Willimantic State Trade
		School
	27.. Stamford	Stamford State Trade School

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
	28. Middletown	Middletown State Trade School
	29. Hartford	Hartford State Trade School
	30. Manchester	Manchester State Trade School
	31. New Haven	Boardman Trade School
	32. Danbury	Danbury State Trade School
	33. Putnam	Putnam State Trade School
	<u>Three schools</u> did not answer the questionnaire.	
DELAWARE	34. Wilmington	H. Fletcher Brown Vocational High School
DISTRICT OF COLUMBIA	35. District of Columbia	Chamberlain Vocational School
	<u>Two schools</u> did not answer the questionnaire.	
FLORIDA	36. Tampa	Brewster Vocational School.
	37. Orlando	Orlando Vocational School
	38. Jacksonville	Duval County Vocational School
	39. Miami	Technical High School
	<u>Two schools</u> did not answer the questionnaire.	
GEORGIA	40. Macon	Macon Vocational School
	<u>Two schools</u> did not answer the questionnaire.	
IDAHO	41. Boise	Boise Senior High School
	<u>One School</u> did not answer the questionnaire.	
ILLINOIS	42. Chicago	Crane Technical High School
	43. Chicago	Lane Technical High School
	44. Chicago	Flower Technical High School
	45. Joliet	Township High School
	<u>Five schools</u> did not answer the questionnaire	
INDIANA	46. Terre Haute	Germeyer Technical High School
	47. Columbus	Columbus Industrial School
	48. Indianapolis	Arsenal Technical School
	49. Evansville	Mechanic Arts School
IOWA	<u>Two Schools</u> did not answer the questionnaire	

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
KANSAS	50. Wichita	Wichita East High School
KENTUCKY	51. Owensboro	Owensboro Technical High School
	<u>Three schools</u> did not answer the questionnaire.	
LOUISIANA	52. Bogalusa	Sullivan Memorial Trade School
	53. Crowley	Southwestern Louisiana Trade School
	54. New Orleans	Issac Delgado Central Trade School
	<u>Two Schools</u> did not answer the questionnaire.	
MAINE	<u>One school</u> did not answer the questionnaire.	
MARYLAND	55. Baltimore	Boys Occupational School #93
	56. Baltimore	Girls Vocational School
	57. Baltimore	Otto Mergenthaler School of Printing
	58. Baltimore	Boys Vocational School
	<u>One school</u> did not answer the questionnaire.	
MASSACHUSETTS	59. Lynn	Lynn Vocational School
	60. Tibury	Vineyard Haven Carpentry School
	61. Shelburne Falls	Shelburne Vocational School
	62. Newton	Newton Trade School
	63. Greenfield	Greenfield Vocational School
	64. Salem	Salem Vocational School
	65. Brockton	Brockton Vocational School
	66. Pittsfield	Pittsfield Vocational School
	67. Hyannis	Barnstable Vocational High School
	68. Fitchburg	Fitchburg Vocational School
	69. Lynn	Lynn Shoemaking School
	70. Leomuster	Saxton Vocational School
	71. Quincy	Quincy Trade School

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
	72. New Bedford	New Bedford Vocational School
	73. Medford	Medford Vocational School
	74. Westfield	Westfield Trade School
	75. Worcester	David Hale Farming Trade School For Girls
	76. Everett	Everett Vocational High School
	77. Lowell	Lowell Boys Trade School
	78. Haverhill	Haverhill Trade School
	79. Worcester	Worcester Boys Trade School
	80. East Weymouth	Weymouth Vocational School
	81. Waltham	Waltham Trade School
	82. Chicopee	Chicopee Trade school
	<u>Ten Schools</u> did not answer the questionnaire.	
MICHIGAN	83. Saginaw	Arthur Hill Trade School
	84. Trenton	Slocum Traux High School
	85. Hamtramck	Hamtramck Vocational School
	86. Jackson	Jackson High School
	87. Detroit	Munger Junior Trade School
	<u>Three schools</u> did not answer the questionnaire.	
MINNESOTA	88. Minneapolis	Miller Vocational School
	89. Minneapolis	Vocational High School
	90. Virginia	Technical High School
	91. St. Paul	St. Paul Vocational School
MISSISSIPPI	<u>One school</u> did not answer the questionnaire.	
MISSOURI	92. Kansas City	Manual High and Vocational School
	<u>One school</u> did not answer the questionnaire.	
MONTANA	<u>One school</u> did not answer the questionnaire.	
NEBRASKA	<u>One school</u> did not answer the questionnaire.	
NEVADA	<u>One school</u> did not answer the questionnaire.	
NEW HAMPSHIRE	<u>One school</u> did not answer the questionnaire.	

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
NEW JERSEY	93. Passaic	Passaic Vocational School
	94. Bayonne	Vocational and Technical High School
	95. Merchantville	Camden County Vocational School
	96. Bordentown	State of New Jersey Manual Training School
	97. Patterson	Patterson Vocational School
	98. Newark	Essex County Vocational and Technical High School
	99. Perth Amboy	Middlesex County Vocational School #2
	100. Jersey City	Jersey City Vocational School
	101. Elizabeth	Thomas A. Edison Vocational and Technical High School for Boys
	102. Elizabeth	Thomas A. Edison Vocational and Technical High School for Boys
	103. Woodbridge	Middlesex County Vocational School for Girls
	104. Atlantic City	Atlantic City Girls Vocational School
	<u>Seven schools</u> did not answer the questionnaire.	
NEW MEXICO	105. Albuquerque	Albuquerque Senior High School
	<u>One school</u> did not answer the questionnaire.	
NEW YORK	106. Dunkirk	Dunkirk Industrial High School
	107. Rome	Rome Trade School
	108. Rochester	Edison Technical and Industrial High School
	109. Buffalo	Burgard Vocational High School
	110. Buffalo	Emerson Vocational High School
	111. Buffalo	Seneca Vocational High School



Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
	112. Buffalo	McKinley Vocational High School
	113. Mt. Vernon	Edison Vocational Technical High School
	114. Ogdensburg	George Hall Trade School
	115. Yonkers	Girls Vocational High School
	116. Yonkers	Saunders Trade School
	117. Syracuse	Apprentice Training School
	118. Elmira	Elmira Aviation Ground School
	119. Schnectady	Vocational High School
	120. Troy	Troy Industrial High School
	121. Amsterdam	Amsterdam Technical School
	122. Niagara Falls	Trott Vocational High School
	123. Batavia	Metal Trades Vocational School
	124. Poughkeepsie	Poughkeepsie Trade School
	125. Brooklyn	Brooklyn High School of Automotive Trades
	126. Long Island City	Queens Vocational High School
	127. Gloversville	Gloversville Senior High School
	128. New York City	Centennial High School of Needle Trades
	129. New York City	Yorkville High School of Womens Service Trades
	130. New York City	Food Trades Vocational High School
	131. New York City	Chelsea Vocational High School
	132. New York City	Metropolitan Vocational High School
	133. New York City	McKee Vocational High School
	<u>Ten schools</u> did not reply to the questionnaire.	
NORTH CAROLINA	134. Charlotte	Technical High School

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
NORTH DAKOTA	<u>Two schools</u> did not answer the questionnaire.	
OHIO	135. Toledo	Whitney Vocational High School
	136. Cleveland	Cleveland Trade School
	137. Cleveland	Jane Addams Vocational High School
	138. Cincinnati	Automotive High School
	139. Cincinnati	Printing High School
	140. Cincinnati	Sewing High School
	141. Cincinnati	Mechanical High School
	142. Dayton	Parker Vocational School
	143. Sylvania	Burnham High School
	<u>Nine schools</u> did not reply to the questionnaire.	
OKLAHOMA	144. Tulsa	Central High School
	<u>Two schools</u> did not answer the questionnaire.	
OREGON	<u>Three schools</u> did not answer the questionnaire	
PENNSYLVANIA	145. Pittsburgh	Washington Vocational High School
	146. New Kensington	New Kensington Vocational School
	147. Homestead	C. M. Schwab Vocational High School
	148. Philadelphia	Edward Bock Vocational School
	149. Philadelphia	Mastbaum Vocational School
	150. Erie	Erie Technical High School
	151. Arnold	Arnold Trade School
	152. Hazleton	Hazleton Vocational School
	153. North Braddock	North Braddock Vocational School
	154. McKeesport	McKeesport Vocational School
	<u>Eight schools</u> did not answer the questionnaire.	
RHODE ISLAND	155. Providence	Providence Trade School
	<u>One school</u> did not answer the questionnaire.	

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
SOUTH CAROLINA	156. Greenville	Greenville High School
	<u>One schools</u> did not answer the questionnaire.	
SOUTH DAKOTA	<u>Two schools</u> did not answer the questionnaire.	
TENNESSEE	157. Knoxville	Stair Technical High School
	<u>Four Schools</u> did not answer the questionnaire.	
TEXAS	158. Houston	Houston Vocational School
	159. El Paso	El Paso Technical Institute
	<u>Two schools</u> did not answer the questionnaire.	
UTAH	160. Price	Carbon College
	161. Ogden	Weber College
	162. Logan	Utah State Agriculture College
	163. Cedar City	Branch Agriculture College
	164. Salt Lake City	Adult Evening School
	165. Murray	Murray High School
VERMONT	166. Springfield	Springfield High School
	167. Newport	Newport High School
VIRGINIA	168. Richmond	Richmond Vocational School
	169. Bristol	Blueridge Industrial School
	170. Lynchburg	E. C. Glass High School
WASHINGTON	<u>Three schools</u> did not answer the questionnaire.	
WEST VIRGINIA	171. Huntington	Huntington Trade School
	<u>One school</u> did not answer the questionnaire.	
WISCONSIN	172. Wausau	Wausau Vocational School
	173. Beloit	Beloit Vocational School
	174. Appleton	Appleton Vocational School
	175. Green Bay	Green Bay Vocational School

Exhibit 1.--LIST OF THE VOCATIONAL SCHOOLS  
RESPONDING TO THE QUESTIONNAIRE.--Continued.

State	City	School
	176. La Crosse	La Crosse Vocational School
	<u>Three schools</u> did not answer the questionnaire.	
WYOMING	177. Rock Springs	Rock Springs High School
	178. Cheyenne	Wyoming Aircraft School
UNIDENTIFIED	179.	
	180.	
	181.	
	182.	
	83 schools did not return the questionnaire.	

Exhibit 2.--TESTS USED BY SCHOOLS  
FOR SPECIFIC TRADES.

**Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES**

Tests used by schools reporting	Trades
1. American Commercial, Psychological and Cooperation English Test (used in ten trade classes)	1. Bricklaying 2. Carpentry 3. Commercial Dressmaking 4. Furniture Finishing 5. Machinshop 6. Power Machine Operator (sewing) 7. Printing 8. Plumbing 9. Sheet Metal 10. Waitress
2. Bell Adjustment Inventory (used in eight trade classes)	1. All Smith-Hughes Classes 2. Auto Mechanics 3. Aeronautics 4. Body and Fender Work 5. Building Trades 6. Machine Shop 7. Radio 8. Welding
3. Bennett Mechanical Aptitude Test (used in seven trade classes)	1. Electricity 2. Machine Shop 3. Machine Construction 4. Machine Maintenance 5. Millwork 6. Sheet Metal 7. Welding
4. Bernreuter's Personality Inventory (used in six trades)	1. Electricity 2. Machine Shop 3. Machine Maintenance 4. Mill Work 5. Sheet Metal 6. Welding
5. Brainerd Special Interest Inv. (used in one trade)	1. All Smith-Hughes Classes



Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
6. California Test of Mental Maturity (used in one trade)	1. All Smith-Hughes Classes
7. California Test of Personality (used in fourteen trade classes)	1. Auto Mechanics 2. Body and Fender Work 3. Building Trades 4. Bricklaying 5. Carpentry 6. Commercial Dressmaking 7. Furniture Finishing 8. Machine Shop 9. Power Machine Operator (sewing) 10. Printing 11. Plumbing 12. Sheet Metal 13. Welding 14. Waitress
8. Chapman-Cook Reading Test (used in ten trade classes)	1. Bricklaying 2. Carpentry 3. Commercial Dressmaking 4. Furniture Finishing 5. Machine Shop 6. Power Machine Operator (sewing) 7. Printing 8. Plumbing 9. Sheet Metal 10. Waitress
9. Clapp-Young Arithmetic Test (used in one trade class)	1. Electricity 2. Patternmaking 3. Machine Shop
10. Cleeton Vocational Interest Inventory (used in two trade classes)	1. All Smith-Hughes Classes 2. Machine Shop

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
11. Clerical Aptitude (Used in ten trade classes)	1. Bricklaying 2. Carpentry 3. Commercial Dressmaking 4. Furniture Finishing 5. Machine Shop 6. Power Machine Operator (sewing) 7. Printing 8. Plumbing 9. Sheet Metal 10. Waitress
12. Cleveland Classification (used in five trade classes)	1. Auto Mechanics 2. Body and Fender Work 3. Foundry 4. Patternmaking 5. Welding
13. Color Tests (discrimination, blindness) (used in eight trade classes)	1. Auto Painting 2. Body and Fender Work 3. Chemistry--Industrial 4. Printing 5. Painting and Decorating 6. Sheet Metal 7. Welding 8. Electricity
14. Detroit Clerical (used in six trade classes)	1. Cabinet making (woodwork) 2. Electricity 3. Machine Shop 4. Printing 5. Painting and Decorating 6. Sheet Metal
15. Detroit Mechanical Aptitude (used in sixteen trade classes)	1. Auto Mechanics 2. Cabinet Making (woodwork)

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
16. Drafting Tests (used in four trade classes)	3. Bricklaying 4. Carpentry 5. Chemistry-- Industrial 6. Electricity 7. Foundry 8. Machine Shop 9. Printing 10. Power Engineering 11. Paternmaking 12. Painting and Decorating 13. Plumbing 14. Sheet Metal 15. Steam Engineering 16. Welding
17. Eyesight (used in one trade class)	1. Furniture Manufacturing 2. Men's Clothing Manufacture 3. Women's Clothing Manufacture 4. Women's Wear
18. Finger and Tweezer Test (used in two trade classes)	1. Welding 2. Household Nursing 3. Printing
19. Herman-Nelson Intelligence (used in nine trade classes)	1. Auto Mechanics 2. Cabinetmaking (Woodwork) 3. Carpentry 4. Chemistry-- Industrial 5. Electricity 6. Machine Shop 7. Printing 8. Painting and Decorating 9. Sheet Metal

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
20. Iowa Language Skills-- Advanced (used in two trade classes)	1. Commercial Art 2. Tea Room Service
21. IER Short Form (used in one trade class)	1. Commercial Dressmaking
22. Kuhlman-Anderson Intelligence (used in seven trade classes)	1. Auto Mechanics 2. Cabinetmaking-- Woodwork 3. Electricity 4. Machine Shop 5. Printing 6. Painting and Decorating 7. Sheet Metal
23. Lawshe and Montaux Industrial Training Classification Test (used in six trade classes)	1. Electricity 2. Machine Shop 3. Machine Maintenance 4. Mill Work 5. Sheet Metal 6. Welding
24. Luria-Orleans Language (used in seven classes)	1. Auto Mechanics 2. Cabinetmaking (woodwork) 3. Electricity 4. Machine Shop 5. Printing 6. Painting and Decorating 7. Sheet Metal
25. Mathematics (used in fifteen trade classes)	1. Auto Mechanics 2. Commercial Art 3. Cabinetmaking (woodwork) 4. Cosmetology 5. Cafeteria 6. Commercial Dressmaking 7. Electricity

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
	8. Furniture Manufacturing
	9. Machine Shop
	10. Power Machine Operator (mathe- matics)
	11. Printing
	12. Plumbing
	13. Sheet Metal
	14. Shoe Manufactur- ing
	15. Welding
26. MacQuarrie Test for Mechanical Ability (used in twenty-one trade classes)	1. Auto Mechanics
	2. Body and Fender Work
	3. Commercial Art
	4. Cabinetmaking (woodwork)
	5. Bricklaying
	6. Carpentry
	7. Chemistry-- Industrial
	8. Commercial Dressmaking
	9. Electricity
	10. Machine Shop
	11. Millinery
	12. Power Machine Operator (sewing)
	13. Printing
	14. Photo Lithography
	15. Patternmaking
	16. Painting and Decorating
	17. Plumbing
	18. Refrigeration
	19. Sheet Metal
	20. Welding
	21. Telegraphy
27. Meier Seashore Art Judgement (used in one trade class)	1. Cosmetology

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
28. Metropolitan Achievement (reading, arithmetic) (used in seven trade classes)	1. Auto Mechanics 2. Cabinetmaking (woodwork) 3. Electricity 4. Machinshop 5. Printing 6. Painting and Decorating 7. Sheet Metal
29. Metropolitan Arithmetic, Grades 4-8 (used in two trade classes)	1. Commercial Art 2. Tea Room Service
30. Minnesota Clerical (used in one trade class)	1. Photo Lithography
31. Minnesota Mechanical Assembly (used in five trade classes)	1. Auto Mechanics 2. Cabinetmaking (woodwork) 3. Electricity 4. Machine Shop 5. Printing
32. Minnesota Paper Form Board Test (used by twenty-five trade classes)	1. Auto Mechanics 2. Aeronautics 3. Body and Fender Work 4. Cabinetmaking (woodwork) 5. Cosmetology 6. Building Trades 7. Bricklaying 8. Carpentry 9. Chemistry-- Industrial 10. Commercial Dressmaking 11. Dental Assistant 12. Electricity 13. Furniture Finishing 14. Machine Shop 15. Music--Vocational 16. Optical Mechanic



Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
33. Minnesota Paper Board Form Test (Revised) (used by seven trade classes)	17. Power Machine Operator (sewing) 18. Printing 19. Painting and Decorating 20. Plumbing 21. Radio 22. Restaurant 23. Textiles 24. Watchmaking 25. Waitress 26. Interior Decorating  1. Electricity 2. Machine Shop 3. Machine Maintenance 4. Commercial Art 5. Millwork 6. Sheetmetal 7. Welding
34. Minnesota Form Board (used by sixteen trade classes)	1. Auto Mechanics 2. Aircraft Mechanics 3. Body and Fender Work 4. Commercial Art 5. Cabinetmaking (woodwork) 6. Cosmetology 7. Building Trades 8. Child Care 9. Electricity 10. Interior Decorating 11. Machine Shop 12. Optical Mechanic 13. Printing 14. Painting and Decorating 15. Tailoring 16. Watchmaking

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
35. Monroe Reading (used in eleven trade schools)	1. Auto Mechanics 2. Commercial Art 3. Cabinetmaking (woodwork) 4. Cosmetology 5. Cafeteria 6. Commercial Dressmaking 7. Electricity 8. Machine Shop 9. Power Machine Operator (sewing) 10. Printing 11. Sheet Metal 12. Plumbing
36. O'Connor Wiggly Blocks (used in nine trade schools)	1. Auto Mechanics 2. Cabinet Making (woodwork) 3. Electricity 4. Machine Shop 5. Printing 6. Power Engineering 7. Pattern Making 8. Sheet Metal 9. Welding
37. O'Connor Finger Tweezer (used in one school)	1. Cosmetology
38. O'Rourke (used in three trade schools)	1. Auto Mechanics 2. Electricity 3. Machine Shop
39. Otis Intermediate Intelligence (used in two trade schools)	1. Millinery 2. Power Machine Operator (sewing)
40. Otis Higher Mental Ability (used in two trade schools)	1. Printing 2. Photo Lithography
41. Otis Quick Scoring Mental Ability (used in one trade school)	1. All Smith- Hughes Classes

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
42. Otis Self Administering Higher Examination (used in one trade school)	1. All Vocational Smith-Hughes Classes
43. Otis Group Test for IQ (used in seventeen trade schools)	1. Auto Mechanics 2. Body and Fender Work 3. Commercial Art 4. Cabinetmaking (woodwork) 5. Cosmetology 6. Bricklaying 7. Cafeteria 8. Commercial Dressmaking 9. Electricity 10. Machine Shop 11. Power Machine Operator (sewing) 12. Printing 13. Plumbing 14. Motor Winding 15. Refrigeration 16. Radio 17. Sheet Metal
44. Performance Tests (six trade schools used such tests)	1. Auto Mechanics 2. Carpentry 3. Commercial Dressmaking 4. Machine Shop 5. Millinery (in sewing and match- ing) 6. Welding
45. Progressive Reading Tests (one school uses this test)	1. All Smith-Hughes classes
46. Pintner General Ability (seven trade schools use this test)	1. Auto Mechanics 2. Carpentry 3. Chemistry-- Industrial 4. Electricity

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
47. Philadelphia Mental Ability Test (three trade schools use this test)	5. Machine Shop 6. Printing 7. Painting and Decorating  1. Auto Mechanics 2. Commercial Art 3. Textiles 4. Electricity 5. Machine Shop 6. Music-Vocational 7. Cabinet Making (woodwork)
48. Prebble-McCrory English (seven trade schools use this test)	1. Auto Mechanics 2. Cabinet Making (woodwork) 3. Electricity 4. Machine Shop 5. Printing 6. Painting and Decorating 7. Sheet Metal
49. Pressey Classification (eighteen trade schools use this test)	1. Auto Mechanics 2. Aeronautics 3. Aircraft Mechanics 4. Body and Fender 5. Building Trades 6. Bricklaying 7. Carpentry 8. Chemistry-- Industrial 9. Commercial Dressmaking 10. Furniture Finishing 11. Power Machine Operator (sewing) 12. Printing 13. Painting and Decorating 14. Plumbing 15. Radio.

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
	16. Sheet Metal 17. Welding 18. Waitress 19. Electricity 20. Machine Shop
50. Pressey Verifying (fifteen trade schools use this test)	1. Auto Mechanics 2. Aircraft Mechanics 3. Body and Fender 4. Building Trades 5. Bricklaying 6. Carpentry 7. Commercial Dressmaking 8. Furniture Finishing 9. Machine Shop 10. Power Machine Operator (sewing) 11. Printing 12. Plumbing 13. Sheet Metal 14. Welding 15. Waitress
51. Matching Test (one school uses this test)	1. Shoe Manufactur- ing
52. Beta--Revised (six trade schools use this test)	1. Electricity 2. Machine Shop 3. Machine Maintenance 4. Millwork 5. Sheet Metal 6. Welding
53. Rate of Manipulation (two trade schools use this test)	1. Cosmetology 2. Commercial Dressmaking
54. Schorling-Carl-Potter Arithmetic (seven trade schools use this test)	1. Auto Mechanics 2. Carpentry 3. Chemistry-- Industrial

Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
55. Science (one school uses this test)	4. Electricity 5. Machine Shop 6. Printing 7. Painting and Decorating 1. Auto Mechanics
56. Sewing (three schools use this test)	1. Men's Clothing Manufacture 2. Women's Garment Manufacturing 3. Women's Wear
57. Special Dexterity (used by one school)	1. Household Nursing
58. Spatial Relations (used by one school)	1. Commercial Dressmaking
59. Stenquist Assembly (used by two schools)	1. Electricity 2. Machine Shop
60. Stenquist Mechanical Aptitude (used by fourteen schools)	1. Auto Mechanics 2. Boatbuilding 3. Commercial Art 4. Cabinetmaking (woodwork) 5. Carpentry 6. Electricity 7. Machine Shop 8. Maritime Trades 9. Music--Vocational 10. Printing 11. Photo Lithography 12. Painting and Decorating 13. Sheet Metal 14. Textiles
61. Terman Test Form A (used by one school)	1. All Smith-Hughes Classes



Exhibit 2.--TESTS USED BY SCHOOLS FOR  
SPECIFIC TRADES.--Continued

Tests used by schools reporting	Trades
62. Turning (used by one school)	1. Household Nursing
63. Wright's Achievement Test in Mechanical Drawing (used by six schools)	1. Electricity 2. Machine Shop 3. Machine Maintenance 4. Millwork 5. Sheet Metal 6. Welding

Exhibit 3.--Cox's Table 20.--PERSONAL  
CHARACTERISTICS AND THEIR VALUES IN  
RELATION TO EMPLOYEE ADVANCEMENT.  
(As compiled from studies of 100 ad-  
vanced employees)

Cox (10 Table 20.--PERSONAL CHARACTERISTICS  
AND THEIR VALUES IN RELATION TO EMPLOYEE  
ADVANCEMENT. (As compiled from studies  
of 100 advanced employees)

Personal Characteristics	Rating Per Cent
1. Adaptability to job	100
2. Adaptability to environment	100
3. Application	100
4. Progress	100
5. Punctuality	100
6. Production speed	100
7. Conduct--job	100
8. Conduct--social	100
9. Thrift (Employer)	100
10. Personality	99
11. Cooperation	99
12. Capability	99
13. Thoroughness	99
14. Accuracy	99
15. Reliability	99
16. Judgement--job	99
17. Judgement--social	99
18. Job interest	99
19. Honesty	99
20. Neatness--personal	99
21. Ambition	98
22. Energetic	98
23. Production quality	98
24. Job orderliness	98
25. Observing	98
26. Initiative	97
27. Versatility	97
28. Physical--health	97
29. Promotional material	97
30. Courtesy	95
31. Stability	95
32. Disposition	95
33. Appreciation--sense of	94
34. Family relations--good	93
35. Financially sound	93
36. Morale	93
37. Tactfulness	92
38. Leadership	92
39. Flexibility	92
40. Courage	87
41. Creative ability	85
42. Student while employed	81

Exhibit 4.--Cox's Table 21.--PERSONAL  
CHARACTERISTICS AND THEIR VALUES IN  
RELATION TO EMPLOYEE NON-ADVANCEMENT  
(As compiled from studies of 100  
non-advanced employees)

Cox (10) Table 21.--PERSONAL CHARACTERISTICS  
AND THEIR VALUES IN RELATION TO EMPLOYEE  
NON-ADVANCEMENT (As compiled from studies  
of 100 non-advanced employees)

Personal Characteristics	Rating Per Cent
1. Courtesy	91
2. Production speed	89
3. Conduct--social	89
4. Conduct--job	89
5. Thoroughness	88
6. Thrift (employer)	87
7. Job orderliness	86
8. Physical--health	86
9. Family relations	86
10. Job interest	85
11. Neatness--Personal	84
12. Punctuality	82
13. Capability	82
14. Adaptability to job	80
15. Reliability	80
16. Honesty	80
17. Production--Quality	80
18. Accuracy	79
19. Application	78
20. Adaptability to environment	77
21. Judgement--Social	77
22. Cooperation	76
23. Disposition	76
24. Personality	74
25. Job judgement	67
26. Financially sound	66
27. Tactfulness	65
28. Ambition	64
29. Energetic	64
30. Stability	64
31. Initiative	61
32. Observing	58
33. Courage	52
34. Versatility	49
35. Flexibility	47
36. Appreciation--sense of	43
37. Progress	42
38. Morale	40
39. Creative ability	37
40. Leadership	31
41. Student while employed	27
42. Promotional Material	04

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