

INDUSTRIAL EDUCATIONAL NEEDS
FOR DEAF CHILDREN IN
OKLAHOMA

By

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TABLE OF CONTENTS

CHAPTER	Page
I A PREVIEW OF THE STUDY	1
Statement of the Problem	1
The Problem Delimited.	2
Technique of Investigation Used.	2
Personal Interviews.	2
Recorded Data.	3
Questionnaire Data	3
Definition of Terms.	4
Recent and Related Studies	5
The Deaf Girl.	5
Deaf and Hard of Hearing in the Occupational World.	7
A Study of a State School for the Deaf	8
II INDUSTRIAL EDUCATION	11
Part A, Definitions.	11
What is Industrial Arts.	12
What is Vocational Education.	14
What is Vocational Industrial Education.	14
What is Industrial Education	15
Part B, History of Industrial Education.	16
Initiation of the Movement	16
Examples in Colonial America	17
Opinions of Leading Men.	18
Later Schools.	18
Development of the Secondary School.	19
Curriculum Organization.	21
The Accrediting System	22
The Land Grant Act of 1862	23
The Smith-Hughes Act of 1917	24
Expansion of Industry in the United States	24
Part C, Aims and Objectives of Industrial Education.	25
Objectives of Industrial Arts.	25
Objectives of Vocational Industrial Education	27
A Statement of Philosophy.	23
III THE OKLAHOMA SCHOOL FOR THE DEAF	32
The Total Physical Plant	33
The Total School Curriculum.	34
The Industrial Education Department.	35
The Industrial Arts Curriculum	36
Vocational Industrial Education Curriculum	37
Extra Curricular Activities.	37
Methods Employed in Teaching the Deaf.	38

CHAPTER	Page
IV ANALYSIS AND INTERPRETATION OF DATA	41
Employment Status	41
Regularity of Work Performed by Former Students	43
Success Rating of Former Students	44
Wage Comparisons of Former Students and Hearing Workers	44
Distribution of Occupational Training Received	45
Evaluation of School Shop Training	46
Extent to which Occupations Learned in School Are Being Followed	47
Deafness and its Relationship to Success	48
Hindrances to Success Because of Deafness	49
More Trade Training Desired	49
Expressed Need for Other Subjects	50
V EMPLOYMENT PROBLEMS OF THE DEAF	52
The Problem of Deafness	53
The Language Handicap	53
Proper Training or Lack of It	54
The Problem of Wages	55
The Problem of Competition	56
Social Adjustment	57
The Problem of Guidance	57
Degree of Hearing Loss	59
VI CONCLUSIONS AND RECOMMENDATIONS	62
Conclusions	62
Recommendations	65
VII APPENDIXES	69
Appendix A, Selected Bibliography	70
Appendix B, Copy of Letter	72
Copy of Questionnaire	73

LIST OF TABLES

TABLE	Page
1. Showing Employment Status of Sampling	42
2. Regularity of Work Performed by Former Students .	43
3. Showing Success Rating of Former Students	45
4. Comparison of Pay With Others Doing Same Kind of Work.	45
5. Distribution of Shop Training Received in School.	46
6. Showing Help of School for the Deaf Training in Finding and Keeping Work.	47
7. Showing Extent to Which Occupational Training Was Followed	48
8. Hindrance of Deafness to Success or Work.	49
9. Number of Per Cent Distribution of Those Desiring More Trade Training	50

CHAPTER I

PREVIEW OF THE STUDY

The function of the public school is to provide educational opportunities for all the youth of the country. The public day school meets the need of the average normal boy or girl in a generally satisfactory manner, but there are a great many physically handicapped children who, because of their handicap, are unable to obtain an education in the public day schools. Therefore it becomes necessary to establish special schools for these people, if they are to become self supporting, useful citizens. The deaf or hard of hearing represent one of these groups. The state of Oklahoma has provided a school, at Sulphur, known as the Oklahoma School for the Deaf, which deaf boys and girls may attend at public expense. An important problem confronting the administrative and instructional staff of the Oklahoma School for the Deaf, is the manner in which the curriculum of the school is meeting the needs of its students. One phase of the problem, that of industrial educational needs, is the basis for this study.

Statement of the Problem. The purposes of this study are:)
(1) to investigate the total physical plant of the Oklahoma School for the Deaf; (2) to investigate the total curriculum of the Oklahoma School for the Deaf; (3) to investigate the department and curriculum of industrial education of the

Oklahoma School for the Deaf; (4) to conduct an occupational survey of former students of the Oklahoma School for the Deaf; (5) to make a survey of recent and related studies for the purpose of determining if possible, what schools have done for the deaf in other states; and (6) to analyze data secured in this investigation and survey, to determine to what degree the Oklahoma School for the Deaf is meeting the industrial educational needs of the deaf children in Oklahoma.

The Problem Delimited. This study will be limited to a survey of the total school plant of the Oklahoma School for the Deaf, its total curriculum, its department of industrial education, and industrial education curriculum; to an investigation of recent and related studies, and to a survey of graduates or near graduates, who graduated from, or left the Oklahoma School for the Deaf, during the years 1938-48 inclusive. x

(Technique of Investigation Used. Both secondary and primary data are used in this study. Secondary data were secured by reading literature in the field of normative-survey research to determine what has been done by other research workers in occupational surveys, and to note the most effective methods which were used. Primary data were secured through the use of questionnaires, mailed to former students, by searching the school records, and by personally interviewing administrative and instructional staff members.)

Personal Interviews. A personal interview was arranged with

the superintendent of the Oklahoma School for the Deaf to obtain such information as a description of the total physical plant, the total curriculum, the physical plant of the industrial education department, and the industrial education curriculum. Permission was obtained to examine files and records from the school office for such information as might prove beneficial to the study and the cooperation of the administrative and teaching staff was assured.

Recorded Data. The school files and records were searched to determine the number who had graduated from or left the school in the years indicated, and to learn as nearly as possible, the mailing addresses of these former students. The mailing list of The Deaf Oklahoman, a monthly paper published in the school print shop, and the mailing list of the secretary of the O. D. D. Alumni League were copied for the same purpose. Sixty names and addresses were secured in this manner, which represents approximately seventy-five per cent of graduates or near graduates who left school in the ten year period covered by the survey. The total list of names is somewhat shortened due to the fact that many of the older students went into defense work during the war years. This reduced the enrollment in the upper grades, to such an extent that there were no graduating classes for the years 1942, 1943, and 1944.

Questionnaire Data. On February 21, 1950, a questionnaire, together with a letter explaining the purpose of, and asking

for the cooperation of the former student in the survey were mailed to each of the sixty persons whose addresses had been obtained. Copies of the questionnaire and letter are included in Appendix B of this study.† Fifty-three per cent of the recipients of the questionnaires had responded with completed forms by the end of the third week after mailing. A second questionnaire and letter were mailed to each of the non-respondents, March 15, 1950, of which eleven were returned complete. A total of forty-three or 73 per cent of those mailed to former students, were returned completed. Six were returned unclaimed, which accounted for 78 per cent of those to whom the questionnaire was mailed. This was considered a high enough percentage to be statistically reliable. X

Definition of Terms. Some terms used in this study, usually considered as having general application are used to apply to specific situations. That a more thorough understanding of the implications of terms used in this study, and the specific situations to which they apply, the following definitions prepared by the writer, together with quoted definitions, are offered as a guide for the reader of this report.

Graduate. One who has completed the full course of academic study as provided in The Oklahoma School for the Deaf, or one who has received a satisfactory amount of academic training and has chosen an industrial vocational curriculum in which the person has done six years of satisfactory training.

Near Graduate. One who has completed all the requirements, in either the academic or vocational curriculum, up to the last semester of study required for graduation.

Deaf Persons. Dr. Elsie H. Martens wrote in, Deaf and Hard Hearing in the Occupational World that

For the purpose of this survey, the term "deaf" refers to those who have a profound hearing disability. The term "hard of hearing" refers to those who hear with difficulty. (3, page 18)¹

Occupation. A field of endeavor in which the major portion of one's time is spent or in which one works for pay.

Wages or Pay. Remuneration received, by persons, for services performed, usually money.

Trade. A handicraft requiring skilled workmanship.

The definitions of terms given here, except those quoted, were prepared by the writer as being particularly adaptable to the scope and findings of this study. It was found that deaf persons and those handicapped to such an extent that they are unable to acquire an education in the public day schools are admitted to the School for the Deaf at Sulphur.

Recent and Related Studies. Many periodical references were checked. These included articles in School Life, Education for Victory, Industrial Arts and Vocational Education, The School Shop, Life Science, and others. The search for recent and related

¹ This type of documentation will be observed throughout this study. The first number refers to bibliographical entry, and the second number refers to pagination.

theses failed to reveal a very considerable sum of work done in this field. Three studies which are of interest are considered here.

The Deaf Girl; A Study of her Education in Relation to her Work Opportunities, is a master's degree thesis written by Samuel Milton Hailing at Ohio State University in the summer of 1943. (14, 96 pages) This thesis is a follow-up study of deaf girl graduates of the New York School for the Deaf in Rochester. Its purpose was to inquire into the occupations followed by the deaf girl graduates of the school and to determine what difficulties she encounters in seeking employment, and through an analysis of the data thus obtained, suggest a program to be used in solving these problems. The questionnaire method of survey was used, but completely satisfactory results were not obtained due to lack of response of those questioned. A further study is suggested recommending the personal interviewing of heads of industries employing deaf girls. A placement officer is recommended to assist in finding for each girl, her first job, and to make follow-up contact to aid her in adjusting to her new position. The study indicated that a course in vocational orientation is badly needed if the girl is to be trained to meet the requirements of the rapidly changing industrial trends. The range of courses should be enlarged to meet new and changing conditions. The survey showed a need for certain aspects of character training. Social progress was hampered by lack of

more adequate means of communication. A need for a more diversified program of training was indicated. It was found that more informational or related subject matter should be given the girls. The inauguration of an orientation program of industrial arts was recommended to build a background of knowledge and skills needed for a successful career. The study recommended that a program of guidance be provided that the girl might have a knowledge of industry and occupations that will enable her to make a desirable occupational choice. The range of specific fields of intensified vocational training should be enlarged to provide the deaf girl with a wider range of choice.

Deaf and Hard of Hearing in the Occupational World, is a report of a survey sponsored by a committee in the United States Office of Education in 1934. Elsie H. Martens was chairman of the survey committee. The project was conceived primarily as a study related to the vocational guidance of deaf and hard of hearing young people. The survey covered twenty-seven states and the District of Columbia. Inquiry forms were filled out by competent field workers, who interviewed the deaf personally. Inquiry forms were also filled out for employers of the deaf to try to determine the needs of industry for deaf workers.

The survey was conducted as an approved federal project under the Civil Works Administration. It was not the purpose of the survey to make an exhaustive enumeration of the deaf and hard of hearing in the country, but rather to secure a sampling large

enough to show definite occupational trends. Three hundred and twenty-two field workers, working under forty-four supervisors conducted the survey. The sampling of deaf and hard of hearing questioned, numbered almost twenty thousand, widely distributed over the twenty-seven states and the District of Columbia. X The following quotation from the report is indicative of the opinion of the report committee regarding the findings of the study in relation to education of the deaf, and adjustment of curriculum to meet present needs:

It is believed, therefore, that the findings of the study should have some significance in relation to the education of the deaf and hard of hearing. If the schools are to give intelligent guidance for vocational activities, they must adjust their curricula to conditions as they are, not as they have been in the past, nor yet, as educational leaders would like to see them. This applies to the education of hearing and non-hearing alike. (9, page 1) X

The survey represents an extensive research undertaking, requiring a great outlay of time, money, and effort. It is published as Bulletin Number 13, 1936 of the United States Office of Education.

A Study of a State School for the Deaf, is an article appearing in School Life, April 1946, written by Elsie H. Martens. (11, pages 21-23)

The study was conducted through the education panel of the Agriculture and Industrial Development Board of the state of Georgia, in cooperation with the United States Office of Education.

The survey revealed a lack of proper facilities for the education of the deaf. Education through the tenth grade is provided in the school. This is the requirement for a diploma except that in a vocational major the completion of at least six grades is required. Accredited status within the state of Georgia has recently been acquired for the school, the intensive program of vocational training being accepted in lieu of the more advanced academic work. The article includes the statement that on the whole the report shows that the teaching procedure and curriculum of the school are similar to that of many other schools, but does not state what the curriculum is in either the Georgia School or others. Major emphasis is upon the acquisition of language, speech, factual knowledge, and some form of occupational skill. Specific fields in which the study recommended expansion are; the use of scientific instruments for the testing of hearing of all pupils, accoustic training, speech and lip reading, additional vocational offering selected on the basis of employment opportunity in the state, education for home making, health and physical education, and educational guidance. Extensive recommendations were made for improvement and expansion of the physical plant.

Certain difficulties were encountered in conducting the present survey. Some of those to whom forms were mailed were slow to respond, and some failed to respond at all even when a second questionnaire was mailed and assurance given that all information would be treated confidentially. It is not known how well each

respondant understood the questionnaire, or what degree of accuracy was employed in filling in the forms. Therefore in this study, as in all like studies, numerous factors are operative which might, in the opinion of some, throw the findings open to question. However the sampling covered a fair cross section of former students, widely distributed over the state, working in a varying assortment of occupations. Therefore the data secured through the investigation described in this chapter, may be considered as indicative of conditions as they actually were at the time of the survey and provide a basis for offering certain suggestions for the consideration of those who are responsible for the education of the deaf in Oklahoma.

CHAPTER II

INDUSTRIAL EDUCATION

Industrial education is a generic term encompassing a wide area in the field of learning. All the general education aims and objectives of industrial arts are included in it, together with the more specific aims and objectives of vocational industrial education. Students usually begin experiencing a phase of industrial education in junior high school, in the shop or industrial drawing experiences of industrial arts, exploring the materials, tools, products, and processes of industry through the seventh, eighth, ninth, and tenth grades. The study of vocational industrial education is usually begun after the student has reached a more mature level of thinking, probably in the junior or senior years of high school, and is confined to the more specific training for trade and industrial occupations, and may be continued to any grade or age level.

Part A, Definitions

The terms industrial arts, vocational industrial education, vocational education, and industrial education represent different areas in the field of learning. While these areas have some interrelationships, each occupies a definitely separate area in the field of educational experiences. Even the teachers, especially those engaged in areas of education not closely related to the

industrial fields, often use the terms erroneously. That the reader may better understand the areas of Learning covered by the several phrases, it seems appropriate to offer at this time, definitions of several significant terms.

What is Industrial Arts? One of the earlier definitions of industrial arts may be found in Bonser's book, Industrial Arts for Public School Administrators. The definition is quoted here.

Industrial arts is a study of the changes made by man in the form of materials to increase their values, and of the problems of life related to these changes, of the appropriate usage of products made, and the social changes resulting from these changes and products. (5, page 2)

This definition is relatively old, but it is a clear concise statement used in many modern writings. The change of the value of materials with the change of form, is evidenced by the difference in the worth of a beautiful piece of furniture, and the rough stock lumber from which it was made. Many problems would result from this one change alone, such as manufacturing processes, problems of distribution, appropriate use and appreciation, and many others.

Wilbur, in his book, Industrial Arts in General Education, includes this definition:

For the purpose of this book, industrial arts will be defined as those phases of general education which deal with industry --its organization, materials, occupations, processes, and products--and with the industrial and technological nature of society. (21, page 2)

This definition clearly expresses the function of industrial arts in the public school, and its relationship to general education.

The State Advisory Committee for industrial arts in Oklahoma, agreed in a statement of guiding principles, prepared in 1940, that:

The term industrial arts, refers to all courses and classes of shopwork and industrial drawing taught in the junior or senior high school for general education and guidance purposes. Its purposes are primarily to orient the student in our current industrial civilization by means of experiences in working with as many of the materials common to everyday life as possible. (16, leaflet)

No reference is made to specific learning or skill, which indicates that in the opinion of the committee members, industrial arts is a part of general education.

The Oklahoma Industrial Arts Association Policy Committee, in the first draft of a new bulletin entitled, Policies for Industrial Arts in Oklahoma, refers to the effect of industrial development on the home and social life of the individual, and defines industrial arts with the following statement:

Industrial arts is a group of school subjects that deal with industry and with the affect of industrial development on the home and social life of the individual, and with the manipulative processes and industrial materials which have become an essential part of the social culture. (12, page 2)

This statement, written in 1949, closely parallels the second cardinal principle of general education, which is, "a command of fundamental processes."

Time and space does not permit the inclusion of all the

definitions which have been written of industrial arts. However, the ones quoted here were prepared by some of the great leaders, and are symbolic of the opinion of the average worker in the field. All of these definitions make industrial arts a part of general education, but that phase of general education which deals with industry, and its effect upon the home and social life of the individual.

What is Vocational Education? Prosser, a leader in the fight for legislation for aid to vocational education said:

Vocational education is that part of the experiences of an individual whereby he learns to carry on any gainful occupation. (13, page 4)

This definition can be applied to any vocational education, whether it be vocational industrial education or others.

What is Vocational Industrial Education? Snedden defines vocational industrial education with the statement:

Vocational industrial education includes those forms of vocational education, the direct purpose of which is to fit the individual for some industrial pursuit or trade. (15, page 547)

This could include the receiving of industrial or trade training, either in school or on the job, at any age or grade level.

Vocational industrial education as used with reference to federally aided instruction, as provided for in the Smith-Hughes Act of 1917, has reference to training for useful employment,

in trade and industrial occupations. In this connection it is usually called trade and industrial education. It is pointed out in section eleven of the act, that the controlling purpose of the act shall be to fit for useful employment, and that such instruction shall be of less than college level, and shall be designed to meet the needs of persons over fourteen years of age, who are preparing for a trade or industrial pursuit, or for the extension of the education of those who have entered upon the work of a trade or industry. The passage of this act marked the beginning of the separation of industrial arts and vocational industrial education.

What is Industrial Education? H. H. London, in a letter to School Shop, 1949, makes the statement that:

Industrial education is a generic term encompassing both industrial arts and vocational industrial education. (8, page 15)

London further discusses the need for clarification of the terms.

The letter is in agreement with the following definition by Friese, in which he defines industrial education with the statement:

Industrial education is a generic term including all educational activities concerned with modern industry, its raw materials, products, machines, personnel and problems. It therefore includes both industrial arts and vocational industrial education. (6, page 7)

The historic terms, manual training and manual arts were forerunners of the term industrial arts, but should not be used except as historic terms. All education activities relating to an

understanding of industry, taught either in industrial arts classes or under a vocational industrial education program are included in the generic term "industrial education."

Part B. History of Industrial Education

While industrial education is a fairly new concept to many people it is not new in fact. Forms of apprentice training can be traced back to early Biblical times and early Greece and Rome and other accounts of it are found in the history of the Monastic Schools of the Fourth Century. Apprenticeship training survived the black-out of the dark ages, gained strength during the Feudal Period, and reached its peak with the aid of the trade guilds during the Renaissance.

Initiation of the Movement. Anderson divides the initiation of the movement for industrial education in the school into three stages. (1) The Renaissance was the period in which apprenticeship training received such strong support from the trade guilds. (2) The second is characterized by attempts of progressive thinkers to plan courses of study or institutions which would afford industrial as well as academic education. This is exemplified in Utopia, by John Locke, in which he would have every man skilled in some trade. (3) The third period is the one in which actual instruction was introduced into the schools by such men as Franke, Semler, and Hecker, in Germany in 1708 or 1709. Franke added tool instruction to the Latin Grammar School, while

Senler added school instruction as industrial and related subjects to apprenticeship shop training. These schools operated during the first half of the Eighteenth Century.

Examples in Colonial America. The earliest attempts at industrial education in America was probably in New Mexico by the Franciscans about the year 1630. This training which was most surely some form of trade training, provided instruction for the Indians that they might better carry on the work of the missions. This early beginning was destroyed by an Indian rebellion in 1680, to be reestablished later in Texas. (3, page 73)

Many trades were followed in Colonial America. The skills and knowledges of these trades were handed down through apprenticeship training. Young men were apprenticed to artificers in metal, stone, wood, leather, cloth, and other materials. A father-son relationship existed in these arrangements, in which the craftsman was to clothe and feed the boy, teach him the skills and knowledge of the trade, and usually his philosophy of politics and religion. (20, page 3)

As early as 1882 the Gardiner Lyceum was established at Gardiner, Maine. Its purpose was to give the farmer and mechanic such scientific information as would enable them to become skillful in their occupations. It also aimed at practical as well as theoretical education. (1, page 141)

The Rensselaer School at Troy, New York was established two years later. It aimed at teaching the practical arts, but aimed also to impart this skill to others. (1, page 141) Maclure's

experiment at New Harmony, Indiana, 1825, afforded students more direct training in the trades. Maclure, a great social worker and philanthropist believed that the school could be self supporting from the returns of products made and sold by the school. The plan failed after a few years, probably due to disagreement between administrators. (1, page 142) Professor John Griscom offered industrial training in his school in New York City in 1826, for the purpose of recreation and cultural education, rather than vocational training. This would indicate, even at that early date, that the benefits of industrial education as a part of general education were recognized by some progressive thinkers.

Opinions of Leading Men on Publicly Supported Industrial Education. John B. Yates made an application to the New York legislature in 1830, asking for financial support for a school which he had planned, to be called the Polytechny. His plan called for the inclusion of an industrial education program as well as other studies. The application was refused by the legislature, (1, page 145) but other leaders were also assisting in the fight for publicly supported schools. In 1831 Governor Throop of Maine publicly recommended that attention be given agriculture and industry in the common schools. (1, page 146) Other leaders who favored publicly supported schools were William A. Alcott and Alonso Potter. (1, page 147)

Later Schools. The Whittling School in Boston was established in 1871. Its purpose was to encourage the proper use of

leisure time through the use of tools. (4, page 403) The Kansas State Agriculture College was established at Manhattan in 1874, under the Land Grant Act of 1862. This act will be more fully explained in a later paragraph. This school had a wagon shop, blacksmith shop, turning shop, paint shop, print shop and telegraph apparatus. (4, page 314) The School of Mechanics Arts at the Massachusetts Institute of Technology, was opened in 1876. It had as its purpose the training of engineers but under the leadership of Dr. Runkle, shop classes were given as part of the curriculum requirements. In 1880 the St. Louis Manual Training School was opened at Washington University in St. Louis on the secondary school level. This was the first secondary school to offer manual training which might be classified as a phase of industrial education. (4, page 351) This school was under the leadership of Dr. C. H. Woodward, who together with Dr. Runkle became the leading advocates of industrial education in America. The first publicly supported school to offer industrial education was the elementary school at Montclair, New Jersey in 1882. (4, page 419) The first publicly supported high school to offer this training was at Baltimore, Maryland in 1884. (4, page 374)

✓ Development of the Secondary School. The early secondary schools of the country were the academy and the Latin grammar school. The academy seems to have been more readily adaptable to the formative society because of its flexibility and lack of

control of college entrance requirements. Because it could serve more purposes, it rather than the Latin grammar school, became the secondary school most generally found in the country during the first half of the Nineteenth Century. The public high school was a later development that accompanied the gradual growth of democracy, and it emerged with the expansion of public elementary education. The academy was popular throughout the Eighteenth Century and into the first half of the Nineteenth Century. (7, pages 391-397) It reached its highest development by 1850 when opposition to the academy began to develop on the grounds that it was a select, exclusive, and aristocratic school catering chiefly to those who could pay fees. The high school developed rapidly throughout the Nineteenth Century, but more especially following the civil war. Gradual evolution of state systems of education, the rapidly increasing wealth of the country, and the growth of cities and towns, all contributed to the development of the public high school into the modern system of today. Stages in the provision for high schools were as follows:

1. Legislation permitting cities, towns, incorporated villages, and districts to tax themselves for school maintenance.
2. The granting of permission to small units to organize high school districts and to tax themselves for school maintenance.
3. The recognition of county units for high school purposes.
4. The grant of special assistance from the state of other sources toward the support of the schools.
(7, page 449)

The extension of state influence and participation in the promotion of high school facilities has been based on the desire to equalize opportunities and consequently to promote free secondary school privileges.

Curriculum Organization. Two purposes governing the organization of the curriculum, which accompanied the growth of the high school, especially during the last quarter of the Nineteenth Century were preparation for college entrance, and preparation for practical life in commercial and mechanical pursuits. Manual training in the secondary school followed the Centennial Exhibition in Philadelphia in 1876. This movement took place in both private and public schools. A provision for manual training was made in St. Louis in 1879 at Washington University; in Chicago, Baltimore, and Toledo in 1884; in Philadelphia in 1885; in Cleveland, Cincinnati, and Omaha in 1886; in Appleton, Wisconsin in 1887; and in Indianapolis in 1890. In curriculum building an attempt was made to enable each student to make the most of his natural aptitude and to render to society the highest return of which he was capable. Therefore there was opened as many routes as possible in an effort to bring together intellectual and practical training in the same school. While European countries nearly wrecked their secondary school system by too rigidly adhering to a limited number of subjects, in the United States high schools were in danger of failure because of the lack of a clear cut conception of the

liberal education curriculum. By 1890 the conquest of the American frontier was ended. This date also marked the beginning of the most remarkable area of progress in industrial and commercial expansion. It became plain that liberal education could not be restricted to intellectual training, but must be interpreted in the light of social organization, and must include practical education also. Kandel made the following remarks about the development of the secondary school.

The high school had developed in the second half of the nineteenth century on the momentum of public opinion, not entirely certain of its place and function in the system of education except that it was to prepare for college and practical life. The last decade of the century was devoted to a consideration of the issues involved in the problem of secondary education, and in the elaboration of principles to guide further development of the high school as an institution to prepare the student according to his capacities for a society entering on a new stage of its history. (7, page 462)

The area of industrial expansion just ahead was a stimulus to the ever increasing and liberal secondary school curriculum.

The Accrediting System. President Frieese of the University of Michigan recommended the organization of a commission of secondary school examiners to visit high schools and issue certificates to such students as had passed their examinations, entitling them to admission at the university. Other states followed this example in rapid succession. While the accrediting system was a successful means of standardizing the high school curriculum, it only performed this function within the limits

of the state in which it operated. Subject requirement for college admission varied considerably from state to state. In an effort to correct these difficulties, the National Education Association appointed a committee of ten, on secondary school subjects in 1892. The committee made its report in 1893. It recommended that subjects be begun at an earlier age. No distinction should be made between students planning to enter college and those planning to enter industry. Attention was drawn to the need for better trained teachers. These recommendations marked the beginning of a new area in high school curriculum organization. The implication was, that regardless of the program chosen, the student would have four years of strong and effective mental training. The public high school had thus begun to solve the problem of providing secondary education for all the children of all the people, but higher qualitative standards still remain to be developed out of new experiments with both subject matter and methods. Much remains to be done if the American high school is to function to the greatest benefit of all the youth of the nation.

The Land Grant Act of 1862. The first Morrill Act, also known as the Land Grant Act, was passed by the national legislature in 1862. It provided 30,000 acres of land, for each member in congress, from a state for the establishment of colleges of agriculture and mechanic arts, within the respective states. The act was supplemented by the Second Morrill Act of 1890, and by the Nelson Amendment in 1907. The Nelson Amendment also provided for teacher training for agriculture and mechanics

arts. The education provided for in these acts was of college level and for adults.

The Smith-Hughes Act of 1917. With the passage of the Smith-Hughes Act of 1917 the federal government made available federal funds for subsidizing vocational industrial education of less than college level, and available to boys and girls as low as fourteen years of age. Vocational industrial education is taught in all-day classes, part-time classes and in evening classes. This type of education has proven extremely popular, increasing from 118,000 enrolled in 1918 to 766,000 in 1948. The specific aims of vocational industrial education together with the fact that its program is federally reimbursed have played an important part in the separation of the industrial arts and the vocational industrial education program.

Expansion of Industry in the United States. The expansion of industry has definitely been a contributing factor in the demand for public industrial education. The great increase in production and the ever-present change in process have led to the need for men trained in these newer processes and increased tempo of production. The United States Patent Office granted patents on 8,000 inventions in 1860. Since 1900 the patent office has granted patents in excess of 25,000 each year. These inventions have had a definite effect on the growth and expansion of industry. The value of manufactured goods increased from two billion dollars in 1860 to fifty-six billion in 1939. The railroad mileage was increased from 30,000 to 412,000 in the same

period. There were 8,000 automobiles in America in 1900, by 1940 there were 32 million automobiles. Large companies spending huge amounts of money contributed greatly to this expansion, but the readiness of the American people to respond, both as producer and consumer, to these new processes and increased production has been a contributing factor, without which the great expansion could not have been possible. Such rapid changes in the nature of society have brought about lack of adjustment among the youth of the nation. They have been asked to adjust themselves to conditions and occupations of which they know little or nothing. Innumerable new materials, new processes, and new problems of adjustment, are offered the American youth each year. The question arises as to the part education has to do with the expanding industry. The youth of the country could not have made the adjustment necessary to meet the changing conditions without the industrial education provided in and out of school.

Part C. Aims and Objectives of Industrial Education

Any desirable end must be the result of some purposeful objective. To obtain these desired ends it is necessary to develop a plan of procedure. This plan of procedure, to be of any very great value, must be based on specific objectives which it is hoped will function to bring about the desired end.

Objectives of Industrial Arts. The following quotation is taken from Industrial Arts in Modern Education, by William T.

Beaton and others:

appreciation of things purchased, of good workmanship, of good design, of ability to do useful things, of orderly procedure, these are specific and identifiable adult life social values, which are objectives of industrial arts and are directly contributed through industrial arts experiences.

. . . . The attitudes, habits and accomplishments we expect the student to acquire, in some measure, as a result of the experiences provided for him in the field of industrial arts, and which it is believed will aid in making him a happy, useful, and successful citizen, are objectives of industrial arts. (2, pages 31 and 34)

These objectives are broad and far reaching. Many of the objectives of general education are incorporated in these objectives. The following statement of objectives agreed upon by the Oklahoma Industrial Arts Association Policy Committee, 1949 further exemplifies the relationship between industrial arts and general education objectives. The committee agreed that specific values of industrial arts being taught in Oklahoma schools includes these:

1. Contributes to consumer education.
2. Develops avocational interest.
3. Aids vocational choices.
4. Develop handy man or home mechanics abilities.
5. Imparts industrial information.
6. Trains in industrial and home safety.
7. Guides in industrial design.
8. Instills an appreciation of applied skills.
9. Develops satisfaction in personal creative achievement.
10. Stimulates interest in a specific field of industrial occupations and develops a personal interest in successful achievement.
11. Provides a knowledge of industrial drawing, the language of industry.
12. Trains to analyze a job into its correct tool processes and to organize them into an efficient procedural order.

13. Recognizes the standards of industrial attainment.
14. Trains in good "housekeeping" or shop-keeping.
15. Develops appreciation of the values of industrial materials or contributes to the conservation of materials and resources.
16. Contributes definitely to later vocational efficiency.
17. Offers opportunity to apply knowledge learned in other school subjects in the completion of industrial arts projects.
18. Complements other school subjects in contributing to general education.

Teachers of industrial arts believe that it is a part of, and makes a substantial contribution to general education; that it orients the boy or girl in the processes and products of industry, thereby aiding in their understanding of the complex problems of the industrialized nation. It is the purpose of industrial arts teachers to provide experiences that will contribute to constructive habits of thought, manipulative skills, and desirable health habits.

Objectives of Vocational Industrial Education. Vocational industrial education is that phase of vocational education which deals with the teaching of trades in public school classes. It may be taught in either private trade or industrial schools, public schools, or on the job, and may include any subject taught for specific occupational purposes, at any grade level. The objectives of vocational industrial education are different from those of industrial arts in that it provides specific vocational education for mature highschool students and trade extension education for adults. It provides education for those

already working in an industrial trade or occupation and it aims to instruct in specific manipulative tool skills and definite trade and industrial knowledge. Its aim, in regard to the high-school boy or girl, is to begin the specific trade or occupational training into which the student could have been guided by the exploratory experiences provided for him earlier, in the shop work of industrial arts. Vocational industrial education, under the Smith-Hughes Act, provides education at lower than college for:

1. Students who are getting ready to enter trade and industrial occupations and who are attending full-time all-day schools.
 2. Young men and women who have left school and who need additional instruction of a refresher or conversion type in order to get a job.
 3. Employed persons, male and female, who, because of technological change or other conditions, need training to fit them for emerging job requirements.
 4. Employed persons of all ages who need upgrading training to fit them to perform their jobs better, or to enable them to qualify for higher and more difficult jobs in their line of work.
 5. Persons injured in the armed forces, in civilian life, or congenitally handicapped who need industrial training to enable them to earn their living as self respecting, self supporting members of society.
- (20, page 448)

While this act provides education at lower than college level, it in no way limits education provided for outside the act to lower than college level.

Statement of Philosophy. A curriculum for instruction in industrial education should be built around a core intended to provide courses in the exploratory field of industrial arts, beginning in junior high school, or in some instances earlier,

and continuing through the tenth grade. Those who do not intend to go into vocational work can profit by continuing industrial arts longer, but those going into industrial trades or occupations will probably profit most by beginning the more specific training provided in vocational industrial education in the junior and senior years of high school.

Objectives of any phase of industrial education should be thought of as specific changes which teachers should make in the lives of their students. The standards or ideals which the teacher should strive to attain, and the experience provided should be selected because of the contributions they will make in one or more of the objectives.

Industry through increasing centralization has been removed from the every-day experiences of the average person, and it becomes the function of the school to give the student, as an objective of industrial education, an appreciation and understanding of the organization, products, processes, and occupations of industry. Viewed in this light, industrial education is essentially a part of general education. Man must realize the extent to which the material commodities are used in daily life, and the extent to which the world's work consists of the making and distribution of these commodities. Only then can there be an appreciation of the importance of that study of the materials and products of industry which will make man intelligent and efficient relative to their use and production. It is doubtful

if academic subjects afford experiences so effective in developing the attitudes and habits which contribute to the wise use of leisure time, worthy home membership, or vocational and economic effectiveness, which are three of the seven cardinal objectives of general education, as do the experiences in the field of industrial education. In the school, a program including the several elements of industrial education, should have a place commensurate with its importance outside the school. This program will afford educational growth adapted to the nature and ability of that more than half of our school population who think more readily in terms of concrete experiences than in verbal or abstract terms.

Out of the idea of learning by doing, came the recognition of the value of working through a process, of making something with the hands or with tools, of doing something skillfully as a basis of rational thinking. Industrial education is ideally suited to lend to studies that direct application to life situations which many other studies lack. Shop work contains the essentials of many of those human experiences which the deaf student of today must put into practice tomorrow. Industrial education for the deaf is justified, not because its objectives are essentially different from the objectives of general education, but because it offers experiences more effective and more economical in attaining certain desirable ends, particularly suited to the deaf, which are given as the aims of general

education, than do academic subjects.

Industrial education teachers of deaf boys and girls, should view their work as a broad educational offering which cannot be satisfied by the mere making of projects, but rather make that project a vehicle by means of which the influence of the shop is carried beyond the shop, the classroom, and into successful future living.

CHAPTER III

THE OKLAHOMA SCHOOL FOR THE DEAF

The "Territorial School for the Education of the Deaf" was founded at Guthrie in 1898. A school, supported principally by the Five Civilized Tribes, had been established near the date, 1892-1894, at Fort Gibson, in which deaf children were enrolled. Children from this school, originally founded for the education of the blind, were transferred to the "Territorial School" at Guthrie at its opening in 1898. The school was first operated under contract on a per-capita per-school-year basis, but by a later arrangement its operation was changed to a per-capita per-month basis. Board, room and laundry as well as instruction were furnished. There was a department for deaf Negroes, who were housed and instructed in separate quarters in this school. The Negro department continued in the school for one year after it was moved to Sulphur, at which time (1909) the department was transferred to the newly established school for deaf, blind, and orphan Negroes at Taft, Oklahoma. (18, page 146)

The Oklahoma School for the Deaf was created by an act of the legislature in 1908, and permanently located at Sulphur by the legislature in 1909. The school as originally created was operated under a board consisting of the State Superintendent of Public Instruction, and three trustees appointed by the Governor. Control was vested in the State Board of Education in 1911, under

which control it has remained since that time.

The school was moved to Sulphur in 1908. Housing was provided in rented buildings while buildings for the school plant were under construction. School work was begun in the new plant at its present location in 1913. Deaf children, between the ages of seven and twenty-one are required to attend school under the compulsory education law. Article XVI, Section 489, School Laws of Oklahoma, 1940. Upon entering school each beginning child is given an audiometric test to determine his hearing loss. They are also given sense training tests to aid in a more homogeneous grouping in the three lower classes.

The Total Physical Plant. The present total physical plant consists of thirteen buildings and grounds. Included in this group are dormitories, for housing the students, the superintendent's home, gymnasium, administration building, vocational building, dining hall and kitchen, power house and warehouse. Other buildings are provided off the campus in which the school dairy is housed. Shelter barns are provided for the school livestock. The school is necessarily a residential school, as the children attend from all parts of the state. Children are provided with board, room, books, tuition, and medical care, while parents are expected to take care of the expenses of transportation, clothing, and incidentals.

Teachers with four years college training, and at least one year study at an accepted training center for teachers of the

deaf are desirable, however, it is not always possible with funds available, to secure teachers with this kind of qualifications. The instructional staff of the Oklahoma School for the Deaf consists of twenty-six teachers, nine of whom are deaf. Twenty of these teachers are employed in the academic department, and six are employed in the industrial education department. Of the nine deaf teachers, five are employed in the academic school, while four are employed in the industrial education department.

The Total School Curriculum. The curriculum of the school for the deaf is very similar to that of regular public schools. In most instances the same textbooks, the same units of study, and the same activity materials are used. Emphasis is upon the acquisition of language ability, speech facility, factual knowledge and some type of vocational skill. Students are grouped into departments or schools designated as lower, middle, and upper. The lower school covers three years of preparatory work, and the first two grades of public school. The next four years are spent in the middle school and covers the equivalent of grades three, four, five and six. The last four years are spent in the upper school where work of approximately the same as grades seven through ten is given, which is the requirement for graduation except that in a vocational major, the completion of at least six grades is required, by which the student may become eligible for graduation upon the basis of trade proficiency. The following quotation from the Twenty-First Biennial Report of the

State Department of Education of Oklahoma clarifies the need for this kind of education for the deaf:

This provision is made in recognition of the extreme language handicap which besets the average deaf child, and in further consideration of the fact that vocational progress may constitute as good or better preparation for everyday living than that secured from the usual academic course. (18, page 149)

This probably accounts for the emphasis that is placed upon industrial education in most state schools for the deaf.

The Industrial Education Department. The Department of Industrial Education is housed in a modern three story brick building, known as the Vocational Building. This department is generally referred to as the Vocational Department. Both industrial arts and vocational industrial education are provided in this department. Two years of exploratory and guidance experiences in industrial arts are offered to boys of the fifth and sixth grades, at the completion of which they are expected to select a vocation at which they will train for the next four years. It must be remembered that these children are about three years retarded in their learning and that fifth and sixth grade boys are about the average age of junior high school boys in the regular public day schools, while boys beginning vocational training at the seventh or eighth grade level are on an average age level with boys of eleventh and twelfth grade in the regular public high school. The industrial education department is divided into four training units. They are the general shop,

leather craft, tailoring, and printing. The general shop contains equipment for woodwork such as; band saw, radial saw, jig saw, surface planer, shaper, woodturning lathe, tool grinder, work benches and hand tools similar to those found in most wood-working shops throughout the country. In addition there are welding equipment; both gas and electric, metal turning lathes, work benches and hand tools. The print shop contains linotype machines, a cylinder press, job presses, proof press, make up stands, type trays, casting box, etc. The tailor shop has dry cleaning equipment, extractor washer, tumbler, steam presses, sewing machines, cutting tables, and small tools for hand work. The leather craft shop contains; patch machines, straight needle stitcher, curved needle stitcher, finishing stand, boot upper machine, boot jack, shoe jacks, leather craft table, work benches, tables and hand tools for leather work. This equipment is all standard production shop equipment, so that many students go from this school already familiar with the machines and equipment with which they will work after taking employment.

The Industrial Arts Curriculum. The industrial arts curriculum provides experiences in hand woodworking, wood turning, wood carving, cabinet making, welding, printing, bookbinding, carpentry, cleaning and pressing, leather craft, shoe repair, and chair caning. These courses are intended to provide training in problem solving, aesthetic appreciation, health, safety first rules, and any other objectives of industrial arts as provided in the public high school, but especially to provide

the exploratory and guidance necessary for an intelligent vocational choice. All boys are required to choose one of the industrial vocations. Girls are given the privilege of choosing one of the industrial vocations, but are not required to do so, remaining, if they wish, in home economics, which all girls are required to take. The reason for this is probably the fact that many girls marry after leaving school, and become homemakers, and are thereby relieved of the responsibility of providing a livelihood.

Vocational Industrial Education Curriculum. The vocational industrial education curriculum is a continuance of, but is a somewhat broadened form of the industrial arts curriculum. In addition to the industrial arts curriculum, it includes painting and decorating, machine woodworking, linotype operation, metal turning, and laundering. This curriculum has been developed in recognition of the fact, that because of his hearing deficiency, the average deaf person must earn his living by a manual skill.

Extra Curricular Activities. Several student clubs, in extra curricular activities are active on the campus, under the guidance of teacher sponsors. Included in these are, a student chapter of the Future Homemakers of America, and Sub Deb sponsored by Ladies Home Journal. There is a Host and Hostess Club of local magnitude, an Out Doors Club for Boys, Nature Study Club, and Boy Scouts troop. Sunday School classes are conducted on the campus by teachers in the school. Many of the older students attend church services in town. The

school is a member of the Oklahoma Highschool Athletic Association and takes part in interscholastic sports. Football, basket ball, base ball, wrestling and track are among the more popular sports. Games are matched and played with neighboring schools and good-will games are played teams from other State Schools for the Deaf.

Methods Employed in Teaching the Deaf. Methods for teaching the deaf vary from school to school, generally dependent on the judgment of the superintendent of the school as to the needs of the student. A statement in the American Annals of the Deaf, November 1948 says in part:

Regarding methods of teaching the deaf, in 1948 the five outstanding systems in use in schools for the deaf throughout the United States were: the manual, the oral, the combined, accoustic, and the so-called Rochester Method. (19, page 429)

(1) The oral system emphasizes speech and speech reading, and prohibits the use of the manual alphabet or the language of signs on the premise that only through the oral method can the deaf be trained to fit into a world of hearing people. (2)

The combined system refers to the system which some educators have adopted as a compromise between the oral and manual methods. The system makes use of both methods and employs each according to the needs and abilities of the pupil. (3) The manual method employs the use of the sign language and manual alphabet in the instruction of the deaf. This method was used in the

earlier American Schools. (4) The accoustic method is based upon the supposition that those deaf children who have some residual hearing should be taught to use what little hearing they have, and that with the aid of individual or group hearing aids they could acquire better speech and at the same time develop their usable hearing. This method is very probably destined for wider use in the schools for the deaf, since manufacturers of accoustic equipment are constantly improving the quality of hearing devices for the deaf. (5) The Rochester Method is a combination of the oral system and the manual alphabet. It received its name from the Rochester School for the Deaf in New York, where its use originated. The method employs the manual alphabet to supplement its oral work on the basis that by spelling out each word in a sentence as it is spoken, the deaf child would be able to develop more natural English.

Although stressing oral and accoustic methods, the Oklahoma School for the Deaf employs a combination of most of these methods, for there are a few classes of totally or almost deaf. In these classes the manual alphabet is used. The use of the accoustic method has gained to a marked extent during the years 1948-1950. By the end of the 1949-50 school term, eight of the Lower School class rooms will be equipped with a console containing amplifier, wire or tape recorder and record player.

The school for the deaf is a public residential school for

the deaf or hard of hearing children of Oklahoma. The school is operated by the state, cost free, to children who are too deaf to receive instruction in the public day schools, but are otherwise able to learn. Funds are made available for operation of the school through appropriation by the state legislature on a biennial basis, at approximately two hundred and twenty thousand dollars for 1949. The entire program is designed with the intention of developing in each student such a proficiency in skill and knowledge as will enable him to meet and overcome the problems of daily life.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

Thirty-six men and twenty-four women or a total of sixty graduates or near graduates of the Oklahoma School for the Deaf are considered in this study. As has been stated in a previous chapter, of the sixty questionnaires mailed to former students, forty-three or 71 per cent were returned complete. Copies of the questionnaire and letter used in this survey are included as Appendix B of this study. Twenty-eight or 46.4 per cent of those returned were from men and fifteen or 25 per cent were from women. Seven or approximately 11.6 per cent were returned unclaimed, giving a return of approximately 81 per cent of those who actually received the questionnaire. Two factors seem to be responsible for the higher percentage of men as compared to women, considered in this study. One is the apparent tendency toward a higher enrollment of men than women in deaf schools throughout the country. The second is that many addresses of former girl students were unobtainable due to the fact that many girls marry after leaving school and move to other localities, thereby losing themselves to former teachers and friends. Figures in the following tables are given in the nearest tenth per cent based on returns of the forty-one persons who reported themselves as employed.

Employment Status. Forty-one, or approximately 95.3 per cent, of those who completed the questionnaire, reported them-

selves as employed. One woman and two men were college students, but the woman reported herself as having part-time employment, and was tabulated with the forty-one employees. Twenty-six or 63.4 per cent of those employed were men, and fifteen or 36.6 per cent were women. Seven had been employed less than one year, five less than two years, and six less than three years. Twenty-three had worked in the same position more than three years. Table I shows the number and per cent distribution of the employment status of the forty-three graduates being studied. Several had worked in the same position much longer than three years, and one person had worked in the same position ten years.

TABLE I

SHOWING EMPLOYMENT STATUS OF SAMPLING

Length of time in present position	Men		Women	
	Number	Per cent	Number	Per cent
Now employed	26	62.4	15	
Less than 1 year	4	14.2	3	20.0
Less than 2 years.	1	3.6	4	26.6
2 to 3 years	4	14.2	2	13.3
More than 3 years.	17	60.0	6	40.0
Unemployed.	2	7.1		
Total	28	99.1	15	99.9

Considering those attending college as furthering their education, one must consider this group as being 100 per cent

gainfully employed. Figures in Table I indicate that these people are stable in their employment and that they are capable of rendering a high degree of satisfactory service.

Regularity of Work Performed by Former Students. Thirty-six of the respondents reported that they are employed full-time, one part-time, two seasonal, and one temporarily. Three did not report this item. Twenty-three of the thirty-six who reported full-time employment were men while thirteen were women. Table II shows number and per cent distribution of length of employment status. Seven of the thirteen women were housewives,

TABLE II

REGULARITY OF WORK PERFORMED BY FORMER STUDENTS

Regularity of work followed	Men		Women	
	Number	Per cent	Number	Per cent
Full-time	23	84.4	13	86.6
Part-time	1	3.6	0	0.0
Seasonal	1	3.6	1	6.7
Temporary	0	0.0	1	6.7
Failed to report	1	3.6	0	0.0
Total reporting this item	26	99.2	15	100.0

at which they consider themselves employed full-time. Two men not reporting this item are college students, while the one reporting seasonal work is a minister and works at a trade or occupation only occasionally. One woman who has been working as a teacher took time from her work to have a baby, but is

going back into teaching at the beginning of the next school term.

Success Rating of Former Students. To the question, how do you rate your success?, Approximately 43 per cent of the men and 40 per cent of the women answered: "succeeding fairly well." Fifty-seven per cent of the men and 46.6 per cent of the women answered that they were succeeding real well, while 13.3 per cent or two of the women failed to answer this question. None answered the question as failing. Numbers and percentages are shown in Table III which also shows that a higher percentage of both men and women consider themselves as succeeding real well rather than fairly well.

Wage Comparisons of Former Students and Hearing Workers. Thirteen men or 50 per cent, received the same pay as others doing the same kind of work. Five women or 33.3 per cent receive pay equal to others. A total of nineteen or approximately 46 per cent of the total group received equal pay. A total of nine persons received less pay than others doing the same kind of work. These were usually individuals who had been employed only a short time. Five or 19 per cent of the men answering this item, reported that they receive more pay than others doing the same kind of work, while two men and seven women did not answer this question. The seven women who failed to answer this question were the housewives who receive no monetary consideration for work done in home making.

TABLE III
SHOWING SUCCESS RATING OF FORMER STUDENTS

Self rating of former students	Men		Women	
	Number	Per cent	Number	Per cent
Failing				
Succeeding fairly well. . .	12	42.9	6	40.0
Succeeding real well. . . .	16	57.0	7	46.6
Did not answer.			2	13.3
Total	28	99.9	15	99.9

TABLE IV
COMPARISON OF PAY WITH OTHERS DOING SAME KIND OF WORK

Pay, compared to others doing same kind of work:	Men		Women	
	Number	Per cent	Number	Per cent
The same	13	50.0	5	33.3
Less	6	23.1	3	20.0
More	5	19.1	0	00.0
Did not answer	2	7.7	7	46.6
Total	28	99.9	15	99.9

Distribution of Occupational Training Received. Most of the respondents had received some type of shop training in the Oklahoma School for the Deaf. Much of this work was taken as vocational training but some of it was taken because the student liked shopwork. A check of the industrial education curriculum, conducted with the assistance of the school superintendent, revealed this work is given in the exploratory and guidance

experiences of industrial arts before the student begins work on the more specific vocational training. Twenty-six men and eight women or a total of 82.9 per cent of those employed had received trade or occupational training in the State School for the Deaf, while only 17 per cent had received trade or occupational training. Fifteen men had taken shop classes in the exploratory experiences of industrial arts, in addition to the more specific vocational training. Eleven men had not taken shop training of any kind, other than that which applied to the vocational major in which the person trained.

TABLE V

DISTRIBUTION OF SHOP TRAINING RECEIVED IN SCHOOL

Kind of training received	Men		Women	
	Number	Per cent	Number	Per cent
Occupational or trade training	26	100.0	8	53.3
No trade training	00	00.0	7	46.6
Other shop training	15	57.7	9	60.0
No shop training whatever	11	42.3	5	33.3

Nine women had vocational exploratory training, while five had not had such experience.

Evaluation of School Shop Training. To the question, "How much did this school training help in finding and keeping employment?" four men and six women answered that it helped a little bit.

Nine men and three women answered that it helped a lot; while six men and two women, or a total of 19.5 per cent reported that the training was largely responsible for present positions. Five men and three women, or a total of 19.5 per cent reported that this training was of no help at all. There are invariably those who have shifted to some other occupation after leaving school. Two men and one woman did not report this item.

TABLE VI

SHOWING HELP OF SCHOOL FOR THE DEAF TRAINING,
IN FINDING AND KEEPING WORK

Extent to which training helped	Men		Women	
	Number	Per cent	Number	Per cent
Helped a little	4	15.3	6	40.0
Helped a lot.	9	34.6	3	20.0
Largely responsible for present position.	6	23.0	2	13.3
No help at all.	5	19.1	3	20.0
Did not answer this item	2	7.7	1	6.6
Total	26	99.7	15	99.9

Extent to Which Occupations Learned in School Are Being Followed. Eleven men and four women, or a total of approximately 27 per cent are working altogether in a trade or occupation learned in school at The Oklahoma School for the Deaf. Four reported working to a large extent, four to a small extent, while twelve or approximately 28 per cent are not working at all in a trade or occupation learned in school. One factor largely

responsible for failure to continue work in trades or occupations learned in school was because many boys reenter agriculture after leaving school and have only a small opportunity to exercise the training learned in school. The data indicate that girls marry and take up the care of the home which keeps many of them from entering industry and applying the industrial skills and knowledge learned in school. However, many of these reported that their training was beneficial as some transfer of learning was possible on entering these new activities.

TABLE VII

SHOWING EXTENT TO WHICH OCCUPATIONAL TRAINING WAS FOLLOWED

Extent to which training was followed	Men		Women	
	Number	Per cent	Number	Per cent
Altogether	11	42.6	4	26.7
To a large extent	3	11.1	1	6.6
To a small extent	1	3.6	3	20.0
Not at all	11	42.1	1	6.6
Total	26	99.4	15	99.9

Deafness and Its Relationship to Success. Deafness is one of the major physical handicaps. Considering this, the question arises as to what extent deafness is a handicap. A question was placed in the questionnaire to determine how much deafness has been a hindrance to members of the former student group considered in this study, in following their respective trades

and occupations in the industrial world.

Hindrance to Success because of Deafness. Fifteen men and seven women, or a total of 53 per cent, reported that deafness had been no hindrance at all in the success of their work. Eleven men and seven women reported a slight hindrance. One man reported deafness as a great hindrance, while one man and one woman failed to answer this question. It is hard for persons in the full faculty of hearing to conceive of a great hearing deficiency as not being a great hindrance to successful living, but the success of the respondents in this survey, together with the figures in Table VIII indicates that this handicap can be overcome to the extent that the deaf may become

TABLE VIII

HINDRANCE OF DEAFNESS TO SUCCESS OF WORK

Extent of hindrance to success of work	Men		Women	
	Number	Per cent	Number	Per cent
None at all	15	53.6	7	46.6
Slight hindrance.	11	39.3	7	46.7
Great hindrance	1	3.3	0	00.0
Did not answer.	1	3.3	1	6.7
Total	28	99.5	15	100.0

useful, self-respecting, and self-supporting citizens. One woman, a teacher, reported that her deafness had been beneficial to some extent.

More Trade Training Desired. Table IX shows the number

and per cent distribution of those desiring more trade training. Twenty-three men and twelve women, or approximately 80 per cent of those employed would have profited by more trade training. Fourteen men and ten women report that they would have profited to a great extent. Nine men and two women would have profited by more trade training to a small extent. Two men and two women would not have benefited by further trade training in finding and keeping employment. One man and one woman did not answer this item. The higher percentages shown in the table are definitely on the side of those desiring more trade or occupational training.

TABLE IX

NUMBER AND PER CENT DISTRIBUTION OF THOSE DESIRING
MORE TRADE TRAINING

Opinions of extent of profit from more trade training	Men		Women	
	Number	Per cent	Number	Per cent
To a great extent	14	53.8	10	66.6
To a small extent	9	34.6	2	13.3
None at all	2	7.7	2	13.3
Did not answer	1	3.8	1	6.6
Total	26	99.9	15	99.8

Expressed Need for Other Subjects. While this survey was an industrial education survey, one must keep in mind that all industrial education is not vocational. The respondents were asked to list subjects, other than shop or vocational subjects,

which in the opinion of former students, would have aided them in the successful performance of an occupation. While the great majority of those reporting are in the vocational field fourteen subjects other than vocational studies were given. English and mathematics were listed with the most frequency. There was an expressed need for each of these by ten former students, while a broader vocational offering was requested by eight. Biology, agriculture, spelling, reading, photography, sports, history, typing, library science, business methods, and foreign language were also listed.

✓ This would indicate that an appropriate background of academic subjects is conducive to a more successful pursuance of occupational skills. The extent to which this group of former students of the Oklahoma School for the Deaf could have profited by additional academic training is a matter of conjecture, however it is plain that in the opinion of this former group, a better background of academic education would be an asset to successful living. This felt need of the deaf is probably no greater than the felt needs of hearing groups in like situations.

CHAPTER V

EMPLOYMENT PROBLEMS OF THE DEAF

Twenty-seven thousand, two hundred and five deaf students were enrolled in schools in the United States in 1947-48. Fourteen thousand and eighty-two of these students are enrolled in public day schools, denominational schools, and private schools. Thirteen thousand, one hundred and twenty-three were enrolled in residential schools. The figures given for the residential schools are for the years 1946-47. Figures given for public day schools, denominational and private schools are for the year 1948. (10, pages 10-11) These statistics are compiled from reports from forty-seven states representing eighty-one schools. Two hundred and seventy-nine deaf students were enrolled in the state of Oklahoma in 1949. Two hundred and twelve of these students were enrolled in the Oklahoma School for the Deaf. Twenty were Negro children enrolled in the School for Deaf, Blind, and Orphan Negroes at Taft, Oklahoma. Twenty-five were enrolled in the public day school, while twenty-two were enrolled in a denominational private school. (10, pages 10-11)

It is believed that there are deaf children in other schools in Oklahoma, however, this reference failed to show more. As these people leave school they are confronted with the problem of employment. These are problems of which the average hearing person is hardly aware, or seldom thinks about. The deaf

person must meet and overcome these problems in order to obtain a satisfactory degree of useful living.

The Problem of Deafness. The deaf person must meet the daily problems of life, as everyone must, except that for the deaf they are multiplied many times because of the problem of deafness. The problems of industry, agriculture, and business, the fields in which most deaf people find their work, must be met in a way different from the manner in which the average hearing person meets them. The deaf person must adjust to the social and economic culture in which he expects to work and live. There seems little reason to doubt that, in some cases, deafness is responsible for the social and economic maladjustment of some people. That degree of hearing loss does have a direct relationship to wages earned is evidenced in Martens' report in which is shown that for both sexes, the person who is profoundly deaf earns less than those who are able to hear, either with or without a hearing aid. (9, page 74)

Language Handicap. A satisfactory means of communication is one of the serious problems to be considered in the employment of the deaf. Communication will of necessity be by written language, the spoken word, or by use of the manual alphabet and signs. Language handicap for the deaf is recognized by most educators of the deaf and the acquisition of language is one of the major objectives in most state schools for the deaf. Most schools for the deaf adopt some language system, most outstanding

of these systems are The Fitzgerald Key, Wing's Symbols, Barry Five Slate, McKee Five Slate, and Natural. Since 1946 the Oklahoma School has used the Wing's Symbols system. This method consists of the use of certain symbols above words, phrases, and clauses, denoting the parts of speech, kinds of clauses or phrases, and tense of verbs. Martens emphasizes the relationship of success to command of speech with this statement:

One must know, too, the relationship of success in a given occupation to other factors, such as degree of deafness, command of speech, and education. (9, page 1)

This report shows that there is no significant difference in the success of deaf men because of a difference in means of communication, but does show that deaf women who communicate by spoken language have a slight advantage over those using either written or manual language. Martens reports that this difference has some relationship to the type of jobs open to women.

Proper Training or Lack of It. A major problem for the deaf when seeking employment, is the lack of training which the person has in the occupation in which work is to be done. The following statement from Martens Report emphasizes the need for adequate and proper occupational guidance:

If handicapped children are to be helped to realize their greatest potentialities occupationally, one must know in which types of occupations handicapped adults are now most successfully engaged Thus an adequate guidance program looking toward vocational self realization takes into consideration, on the one hand, the world of employment in which he must find a place. (9, page 1)

Will the training be such that the deaf person can meet the changing demands of industry, or will the training received in skill and knowledge be of a kind, the need of which will disappear with the changing processes of industry? That a relationship exists between the earning ability of the deaf person, and the amount or type of education which the deaf person had acquired is evident. The following quotation by E. H. Martens exemplifies the employers estimate of the need for more and better training:

Chances of success, as measured by the employers estimate, increase with the number of school grades completed. Particularly do persons of some collegiate training appear to have the advantage for outstanding success in whatever occupation they are found. (9, page 62)

The Problem of Wages. When a deaf person seeks employment the question arises as to how much money he will receive for his work. To secure the maximum in satisfactory living, for himself and family, the person must receive enough money to be able to live on a social level comparable to that of those with whom he comes in daily contact. Will he be able to demand and receive wages equal to those doing the same kind of work that he performs? Or will unscrupulous employers take advantage of his handicap and need for employment and pay only the minimum wages for which such services can be secured? The deaf person is concerned with labor unions and the principle of collective bargaining. He must go into the industrial world and meet competition already established, for him, by hearing people.

These problems must be considered by the deaf person and the individual or heads of industry who would employ the deaf as well.

Data obtained in this survey indicate that deaf people are capable of securing for themselves, pay equal to the wages of others doing the same work. The conclusion may be drawn from an analysis of the data, that so long as the deaf person is adequately trained to meet the demands of the changing industry that the person can, on the average at least, rest assured of receiving fair wages.

The Problem of Competition. For the average deaf person competition is a major problem. When the deaf person seeks employment he must be prepared to meet the competition of a hearing world. The Fifteenth Biennial Report of the State Board of Education contains the following statement:

While training in hand skills is thus recognized as a major aim in the education of the deaf, the educational problem is by no means a simple one. To be successfully employed, the deaf person must not only know his trade, but he must master the difficulty of competing with normal hearing people in an equal basis. If this is a difficulty which millions of unemployed people who have no handicap are unable to overcome, how much greater is the deaf person's problem. To offset his handicap he must learn to read the lips; he must master the indescribably complicated art of speaking without hearing his own voice, and he must learn to understand written English. (17, pages 193-194)

The manner in which the deaf person meets competition in everyday living depends largely in the kind of training received in school.

Social Adjustment. After leaving school, the deaf person finds that many social adjustments must be made. Problems of citizenship, school, church, home, and family must all be faced before the person becomes socially adjusted. The deaf person must become a part of the economic system of the country, a producer and consumer of goods, a voter and a taxpayer. The person will probably become the head of a family, assuming the responsibilities involved, will make new friends, and become a member of civic, social, or other clubs. The problem of changing from institutional living to family living, in the case of those who have spent a major portion of their developmental years in a state school for the deaf, is not as great as is at first apparent. Most deaf children have homes in which they spend some time each year. Holidays and summer vacations are spent in the home by most deaf children, thereby relieving the routine of institutional living. Some adjustment is necessary, however, that the individual may find himself congenially situated in the smaller group of the family, rather than the larger group of the school. These problems must be remembered, when employment of the deaf is considered if the deaf person is to obtain the greatest satisfaction from the work being done, and if the employer is to receive the greatest economic returns from service rendered.

The Problem of Guidance. A sound program of guidance is as essential in the educational program of the deaf student as it is for the hearing. Every deaf student should have the

benefit of a sound program of vocational guidance. This does not mean that every one should be guided into some trade. Some deaf students can no more become skilled workmen than can some hearing students. Personal likes and abilities should be considered; if a student, either deaf or hearing, is mentally retarded or dull, he will be a poor risk for industrial education. Even if this were not so, the necessary training equipment is too expensive and its operation too dangerous to be risked in the hands of mental deficient. Only those who are physically fit and mentally alert should be directed into vocational or trade training. Knowledge of individual differences in mental capacity, mechanical skill, and personal characteristics, are essential to a sound guidance program for the deaf. The following statement from Martens' report is indicative of the need for sound vocational guidance practice:

Individual differences among deaf pupils are just as significant as among the hearing. Their abilities and aptitudes need to be studied scientifically in order that the guidance given to each one may lead to the best possible selection of vocational activities. There can be no proper guidance without knowledge of physical fitness, mental capacity, mechanical skill, and personal characteristics. Cumulative data in these items for each pupil are no less necessary in a school for the deaf than in a school for the hearing. On the basis of such information can be built a program of guidance that is directed toward the realization of the greatest potentialities of every student.
(9, page 91)

A well organized guidance program should operate in every

school for the deaf or hard of hearing in the country, whether it be day school or residential. Included in its objective should be, on the one hand, an analysis of individual needs and abilities, and on the other hand, an analysis of opportunities for future employment. Both need to be considered in the development of a program of educational guidance.

Degree of Hearing Loss. The way in which a person will be able to meet life's problems is influenced to a great extent upon the degree of hearing loss. Hearing loss is determined through the use of scientific instruments and methods, by persons trained in their use and application. Pupils are classified roughly into three groups on a basis of degree of hearing loss. These are:

(1) Children who are born with a total or almost total loss of hearing, or who through disease or accident lost their hearing before they had learned to talk; (2) children who lost all or almost all of their hearing after speech and language patterns had been well established; (3) children, who, while having significant hearing loss, are not profoundly deaf and whose varying degrees of residual hearing can be utilized to great advantage in their education. (17, page 191)

These groups may also be divided, making definite classification uncertain. A person born deaf, or one who had developed deafness in early life would be at a definite disadvantage, when compared with a person who had developed deafness in later life, or even early childhood, if language patterns have been established. Under these conditions the degree of hearing loss might be the same, but degree of handicap because of hearing loss, would

very definitely be different. These and many other factors enter into the classification of degree of hearing loss. The Fifteenth Biennial Report of the State Department of Education includes the statement that:

While acknowledging the fact that degree of deafness is not the sole criterion for determining the probable success of using electrical amplifying devices . . . in many instances speech ability could probably be improved in this way, and that in some instances the child might be so materially helped by a hearing aid that he could return to the regular public schools. (17, page 192)

While all deaf students are not able to receive benefit from hearing aids, many do. The use of scientific testing together with the use of acoustic equipment can do much to lessen the degree of this handicap.

Deaf School facilities and curriculum should be so designed, planned, and administered in such a way as to fit the deaf student to meet the problems of daily living. Every effort should be made to place before the deaf student occupational training by which he will have opportunity to exercise his desire and ability in occupational choice. A program of guidance is almost an essential for the vocational deaf student, that he may fit himself for occupations within the realm of his capabilities. Efforts should be made in an educational program for the deaf to know the occupational opportunities within reach of the graduating deaf student. Only in this way can those charged with the responsibility of educating the deaf develop a guidance program that will function toward the greatest benefit of the

deaf student. To meet the problems of every day life the deaf person must also be trained in social culture, economics, civics, family relationship, and everyday citizenship. These suggestions are pertinent to the everyday problems which the deaf person will come in contact with when he seeks and finds employment.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The purposes of this survey are to investigate; (1) the total physical plant of The Oklahoma School for the Deaf, (2) the total school curriculum, (3) the industrial education department, (4) the industrial education curriculum, and (5) to survey a group of former students of the school, and try to determine to what extent The Oklahoma School is meeting the needs of its graduates.

Conclusions. The total physical plant seems to be adequate for the comfort, care, and physical well-being of the student group. Ample dormitory space is provided, together with food, laundry, and hospital care. Facilities for teaching the deaf appear to be as good as those found in most state schools for the deaf. The system includes an academic department in which the regular day school subjects, speech, speech reading, and the acquisition of language abilities are emphasized. The three divisions of the school which are designated as lower, middle, and upper may be considered as near the equivalent to elementary, intermediate, and junior high of the regular public day school. Three years of preparatory work and the first two years of regular school are given in the elementary school, and the third, fourth, fifth, and sixth in intermediate. The seventh, eighth, ninth, and tenth grades are given in high school.

Electric amplifying devices are used for both individual and group teaching so as to make use of what residual hearing a student may have, in the learning process. A combination of the oral and acoustic methods are used in teaching, however a few special classes receive all or most of their instruction manually. Scientific instruments and methods are used to determine degree of hearing loss, which is necessary to a satisfactory sectioning of classes. The industrial education department is an important division of the school, where as indicated by data secured in the survey, 72 per cent of those surveyed received training for their lifework. The department of home economics is divided into two branches, foods and clothing. The foods department offers training in foods, nutrition, table service, meal planning, and cooking. The clothing department includes training in plain sewing, dressmaking, fitting and mending. The agriculture activities include dairying and swine feeding.

It was found that the total school curriculum very closely parallels the regular public school curriculum through the tenth grade, except that for beginning students, ^{77 but I did not see} a three year preparatory course is given to orient the pupil into school and ^{to} to try to establish enough language that the student will be able to do school work creditably. The industrial education department offers training in seventeen activities, and includes ^{both} both industrial arts and vocational industrial education. Both ^{could}

not be derived from the selection of course work

Boys and girls are trained in this department. Classes are begun in the field of industrial arts in the middle school with students in the fifth or sixth grade. These students are about the average age of regular public school students entering junior high school. Vocational training is begun at about the seventh grade and continued through the tenth grade. The seventeen activities taught in the department are; hand woodwork, cabinet building, carpentry, wood turning, wood carving, welding, metal turning, tailoring, printing, shoe repair, leather craft, laundering, chair caning, linotype operation, machine woodwork, and painting and decorating.

Data from the questionnaire revealed that 95 per cent of those surveyed were working, and the remaining 5 per cent were attending college approximately 82.9 per cent of those working had received trade training in The Oklahoma School for the Deaf. The data indicated that 72 per cent were working in trades or occupations learned in the school. Of those working, 74 per cent stated that training received in the Oklahoma School for the Deaf had been beneficial in finding and keeping employment, while 88 per cent indicated that they would have profited by more trade training in the school. Need for more training in fourteen subjects other than trade and occupational, was expressed by the group surveyed. Most of these subjects are offered in the school, curriculum, but no way was found to determine to what extent these desired subjects had been studied.

These findings indicate that The Oklahoma School for the Deaf is meeting the needs of its students in a fairly adequate manner by offering a curriculum of practical education designed to fit the deaf student for everyday living.

Recommendations. That The Oklahoma School for the Deaf is offering a fair industrial education program to its students is evidenced by the data secured in this survey. However conclusions, arrived at by an analysis of the data, suggest certain additional training. These suggestions are not made as being applicable to any one school, but might be applied to any deaf school, and are made in the interest of deaf students everywhere.

A follow-up study is recommended for each graduate of the school. This service should include regular reports from the student, and if employed, from the employer as well, to some person of authority in the school, this person to be called a placement and follow-up officer. The former student's social and economic adjustment could be checked in this way and it is suggested that the report should be made at least once each quarter for the first year of the student's employment. Data so secured could be tabulated and filed for future need in curriculum building. An occupational study, each five years of former graduates is suggested to keep the school abreast of the occupational trends, and to try to determine if students are being prepared to meet the needs of the rapidly changing industry. [A survey of this nature could be made by a teacher

in the school doing graduate work, or by any person willing to cooperate with the school in such an investigation. Approximately 21 per cent of the respondents to the questionnaire, in this study, indicated that more trade or occupational training would have been desirable. This is not surprising in view of the light of Martens' report which shows deaf persons working in 250 occupations. (9, pages 39) A program of training, with as broad curriculum as possible, in each of the major occupational divisions of industry, homemaking, agriculture, and commerce would be desirable. A broadening of the industrial education program, especially for girls, is suggested. Any curriculum change to be made should be made in view of employment opportunities. Twenty per cent of those reporting in this study were homemakers. This information emphasizes the need for additional homemaking education in a school for the deaf. More than half of the women reported in this study were housewives, and very probably others will become housewives at some time. Data from Martens' report shows that approximately 20 per cent of the women interviewed in that survey were engaged in domestic or personal service. (9, page 45) The Oklahoma School for the Deaf has a fairly adequate department of home economics.

† A broader agricultural program would be desirable. Data from the questionnaire used in this survey revealed that 10 per cent of those surveyed were farmers. These former students returned to, or took up farming after leaving school. While

some transfer of learning between trades learned in school and agriculture would take place, these students would definitely have profited more from agricultural training. In a state whose basic industry is dominantly agriculture, an extensive agricultural program would be desirable. This is not always possible because of lack of funds, or suitable land for an extensive crop program, but small projects such as swine and cattle feeding, animal husbandry, floriculture, pasture crops and soil improvement, would be of material aid to these boys who will return to the farm after leaving school, rather than the industrial training which the boy took because there was no choice.

A commerce department would add greatly to the school curriculum. Martens' report suggests a great number of business occupations at which the deaf become quite proficient. Some of these are; typing, cataloging, indexing, bookkeeping, filing clerk and others. Martens indicates that many of these people become extremely good at their work. A program of this kind would do much to relieve lack of occupational choice, especially for girls whose choice is limited. Business training is adaptable to the training of both boys and girls, and would broaden the occupational choice for both groups. Business training offered in the school would do much to raise the standards of training toward the professional level. It is especially suitable for girls whose work must, of necessity, be of a kind suitable to their physical strength.

The different divisions of the industrial education department could be better coordinated under a person known as the head of the department. This department head would aid in class scheduling, curriculum building, and harmonious planning with the academic department.

The survey suggests further study in the field. A survey could be made of employers of the deaf to try to determine how well, in the opinion of employers, the deaf are prepared to take up employment on an industrial basis, and to determine as nearly as possible the occupational trends of industry. A study of other state schools for the deaf to determine how other state deaf schools are meeting their students needs could be made. A survey of this kind might investigate curriculum, physical plant, enrollment, number of teachers, etc. No doubt the outcome of such studies would prove interesting.

APPENDICES

- Appendix A, A Selected Bibliography
Appendix B, Letters and Questionnaire

APPENDIX A, SELECTED BIBLIOGRAPHY

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APPENDIX B, COPIES OF LETTER AND QUESTIONNAIRE

Sulphur, Oklahoma

To: _____, former student of the Oklahoma School for the Deaf.

I am making a survey of the graduates or near-graduates who have left the Oklahoma School for the Deaf during the school years 1938 to 1948 inclusive.

I would like to know if the training which you received at the Oklahoma School for the Deaf is aiding you in your present work, whether you are making use of it in a material way, and what benefits you have received from it. What suggestion can you make, in the light of your experience, for improving the courses for the better industrial training of future students of the Oklahoma School for the Deaf?

This information will be used as a part of a master's degree thesis which I am writing. The thesis is entitled, "Industrial Educational Needs for Deaf Children in Oklahoma." All the information you supply will, of course, be used anonymously, that is, without mention of your name. Therefore you need feel no hesitancy in answering frankly and completely any question on the enclosed questionnaire.

Your cooperation in filling out and returning the questionnaire at once in the enclosed, self addressed and stamped, envelope will be greatly appreciated.

Respectfully,

J. Bryan Stephens
O. S. D.
Sulphur, Oklahoma

Enc. 2

Approved by:

DeWitt Hunt
Thesis Advisor and Head,
School of Industrial Arts Education
and Engineering Shopwork

INDUSTRIAL EDUCATIONAL NEEDS FOR DEAF CHILDREN IN OKLAHOMA

A master's degree thesis in progress at Oklahoma A & M College, by J. Bryan Stephens, finishing the spring semester of 1950. A questionnaire form for persons who have attended the Oklahoma School For The Deaf.

Directions: In the following questionnaire, a group of answers is provided for each question, listed alphabetically as a, b, c, etc. Select the answer which most nearly applies to your case and place a check mark in the space provided at the right margin. Where space is provided for a written answer, write the answer in the space provided. Check mark only one answer in each group.

Name	City
Street and number	State
Year of graduation from O. S. D. _____	Date of birth _____ Sex _____

1. What is your present occupation? _____

2. What duties do you perform? _____

3. Are you now employed?

- (a) Yes _____
- (b) No _____

4. How long have you worked at your present job? _____

5. How regular is your work?

- (a) Full time _____
- (b) Part time _____
- (c) Seasonal. _____
- (d) Temporary _____

6. How do you rate your success in your position?

- (a) Failing _____
- (b) Succeeding fairly well. _____
- (c) Succeeding real well. _____

7. Is your pay the same as the pay of others doing the same kind of work?

- (a) Yes, the same _____
- (b) No, less. _____
- (c) More. _____

8. What is the name of your present employer? _____

9. Were you trained for a trade or occupation in the state school for the deaf?
 (a) Yes _____
 (b) No _____

10. Did you have other shop training at which you worked, just because you liked the work, but never intended to use as an occupation?
 (a) Yes _____
 (b) No _____

11. List shop or occupational training which you received in the state school for the deaf. _____

12. How much did this training help you in finding and keeping work?
 (a) Helped a little _____
 (b) Helped a lot. _____
 (c) Was largely responsible for present position. _____
 (d) Was no help at all. _____

13. Are you working at a trade or occupation for which you were trained in the state school for the deaf?
 (a) Yes, altogether _____
 (b) Yes, to a large extent. _____
 (c) Yes, to a small extent. _____
 (d) Not at all. _____

14. Describe occupational training which you have received, other than that received in the state school for the deaf. _____

15. How has deafness affected the success of your work?
 (a) None at all _____
 (b) Been a slight hindrance _____
 (c) Been a great hindrance. _____

16. In searching for employment, would you have profited by more shop or trade training in the state school for the deaf?
 (a) Yes to a great extent _____
 (b) Yes to a small extent _____
 (c) None at all _____

17. List other school subjects which you think would have helped you in finding and keeping employment, and in living a better life.

STRATHMORE PARCHMENT

100% RAG U.S.A.

Typist:

Lucile Loney
School of Education