

A RECOMMENDED PROGRAM OF INDUSTRIAL EDUCATION
FOR
NORTHEASTERN OKLAHOMA A. & M. COLLEGE

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

The widespread interest in the junior college throughout the nation, together with the lack of understanding of its functions and of its present growth, fully warrants the presentation of a study about this subject. The junior college has slowly but definitely found its way into the American education system. Its birth came as a necessity, and its growth has corrected some of the inadequacies of the long established American system of education. The presence of the junior college in a community means that an opportunity is offered to the youth of that community to give themselves a thorough educational tryout without great expense and without leaving home after graduation from high school. It is the result of an effort on the part of our democratic way of life to meet the educational needs of our youth and adults beyond the high school. It provides for those who have neither the capacity to profit by university instruction nor the necessary financial backing to round out their education by two years of work of college grade. This work is usually given in smaller classes and with more personal supervision than is possible in larger colleges.

The immature boy or girl just out of high school will have a much better opportunity under such instruction than is possible in the crowded classes of the ordinary university, taught by beginners or by the lecture system.

The purposes of the junior college are many. The four most widely recognized functions of the junior college were designed and the criteria for their existence determined by W. F. Thomas, in his doctoral dissertation at Stanford University in 1926, as follows: popularizing, preparatory, terminal, and guidance.¹

Popularizing function: the function of extending education to secondary school graduates who, for geographical or economic reasons, could not otherwise secure it; and of giving similar benefits to mature residents of the community.

Preparatory function: the function of giving two years of college work, equivalent to that offered in the freshman and sophomore years of standard universities, which will prepare students adequately for upper division specialization in the university.

Terminal function: the function of giving specific preparation along vocational lines for occupations on the semi-professional and other levels which will qualify students who finish them for immediate places in specific life occupations; and of giving general education for citizenship and for life to other students who cannot continue their formal education beyond the junior college.

¹ Walter Crosby Eells, Why Junior College Terminal Education, American Association of Junior Colleges, Washington, D. C., 1941, pp 3-4.

Guidance function: the functions of taking scientific interest in the individual traits and abilities and in personal welfare of the student, of training him to think, of helping him to organize his studies effectively, of making his college and life experience profitable to him to an optimum degree, and of assisting him to fit into his place after leaving the junior college, whether in a higher educational institution, in a life occupation, or a way of life.

Purpose of the Study: A study of junior colleges throughout the nation will disclose a great variation in their organization and function. The junior colleges of California will be much different in many aspects from the junior colleges in New York. It is very hard to judge all junior colleges by the same criteria. Each college has its obligations to the society in which it exists. Just as the industry and people of one section of the nation are different from another, so are the junior colleges different. One junior college may have strong college preparatory and academic aims while another may be serving only the terminal function. The purpose of this study is not to judge junior colleges, but to present unusual examples of what can be done in this area of education.

Need for the Study: The first part of the study was made to meet the immediate need of the writer for a better understanding of the basic philosophy that has been the guiding factor in the rapid growth of the junior college movement. An understanding of the philosophy and objectives of the junior college as a whole is needed in order that the

writer may formulate a workable philosophy and establish objectives that will guide him in organizing an industrial education department for one of the junior colleges of Oklahoma.

The four immediate objectives of this study are (1) to obtain a background of information and an understanding of the philosophy of the junior college idea, (2) to understand the services that can be performed by junior colleges, (3) to analyze the needs of a given area and (4) to suggest desirable curriculums in industrial education for a junior college that will meet the needs of patrons in the area studied.

Extent of the Study: The first chapters by nature are general. The study of the junior college movement covers most of the United States. The time covered in this part of this study is from 1892 to 1947. Special emphasis is placed on the history and development of the junior colleges of Oklahoma. In the later chapters the study is of the northeastern counties of Oklahoma and the bordering counties in Kansas and Missouri. Most of this territory can be inscribed in a circle with Miami, Oklahoma, as a center and a radius of fifty miles.

Research Technique Used: The library technique of research was used in collecting data and information concerning the history and philosophy of the junior college

movement. The best books on the junior college were reviewed and studied. In addition to published books, information was gained from the Junior College Journal, the official journal of the American Association of Junior Colleges. Many bulletins from various junior colleges were examined and bulletins and reports from the state departments of education were studied. The information used in the last chapters of this study was gained by the survey technique. The major industries of northeastern Oklahoma were visited by members of the faculty in the Industrial Education Department of Northeastern Oklahoma A. & M. College to observe the operations performed and tools used by employees working in the industry. Personnel officers of the industries of this area were interviewed to determine what is desired of an employee in the way of industrial training by the employer. Payroll classifications of various companies were also studied. Information gained in the guidance center of the college from personal interviewing with present and former students was also helpful in formulating the proposals in this study.

Review of Similar Studies: A partial survey of Cameron State School of Agriculture was made in 1932 by Dr. Henry G. Bennett and Dr. Schiller Scroggs. The student body, the faculty, institutional finance, physical plant and unit cost of instruction were studied. The principle

findings in this survey revealed that four-fifths of the student body came from homes within fifty miles of the college. The enrollment of this junior college had increased 378 per cent from 1928 to 1932. Only one fourteenth of the students were enrolled in agriculture. The instructional staff consisted of fifteen members, only five of whom had the Master's degree. The average teaching load was 19.6 college hours. Salaries ranged from a low of eighteen hundred dollars to a high of nineteen hundred twenty three dollars. In examining the marks given by these instructors it was found that more than twice as many "A" and "B" grades were given than would be expected in a normal distribution. The most conspicuous weakness of the institution was the Library. The equipment in general was not sufficient for teaching the curriculums offered. The Home Economics Department and the Commerce Department were the best equipped in the school. The per capita cost was only \$83.25 in this college. The study resulted in the recommending of a nine point policy for higher education for Oklahoma.²

A study of the students, curriculums and adjacent counties of Eastern Oklahoma College was made in 1938 by James Frederick Reed. In this thesis the author makes a

² Henry G. Bennett and Schiller Scroggs, "The Junior College Idea In Oklahoma," Junior College Journal, 3:75-80, November, 1932.

comparison of the purposes and curriculums of the state junior colleges. A study of the students, their vocational interest, home situations, and the possibility of their continuing training in a four year college was made. The purpose of this study was to determine the suitability of the curriculums to the needs of the students. The findings were that the present curriculums were not suited to the needs of the students. Mr. Reed recommended that since it was impossible for the majority of the students to continue this education in a four year college, the students should be guided into a vocation with a shorter training period. The suggestion was made that a guidance organization be installed at this college.³

In a special report presented in partial fulfillment of the requirements for a Master's degree at Colorado State College of Agriculture and Mechanic Arts, Paul S. Wheeler⁴ formulated a list of objectives for the Industrial Arts Department in the Bartlesville Junior College. These objectives were selected after a study was made of the general education objectives given by the Educational Policies

³ James Frederick Reed, "A Study of the Students, Curriculum and Adjacent Counties of Eastern Oklahoma College," (Unpublished Master's Thesis, Oklahoma A. & M. College, Stillwater, Oklahoma, 1938.), 53 pp.

⁴ Paul S. Wheeler, "A Plan for the Industrial Arts Department in Bartlesville, Oklahoma Junior College," (Special Report, Colorado State College of Agriculture and Mechanic Arts, Fort Collins, Colorado, 1940), 57 pp.

Commission, the seven educational changes given by the Denver commission, the objectives of the junior college, and the objectives of industrial arts for the secondary school. With the formulated objectives as a criteria, a curriculum for the Industrial Arts Department was recommended.

Definition of Terms Used:⁵ The following definitions of terms related to the junior college field in general and to the Industrial Education Department of a junior college in particular will be used consistently throughout this study.

Junior College Movement. A term used to refer to the growth, development, and status of the Junior college in all its branches, especially during the twentieth century.

Junior College. (1) An educational institution requiring for admission as a regular student, four years of high school education, or its equivalent; offering two years of work in standard college courses or their equivalent; or two years of work in courses terminal in character of collegiate grade and quality; as both such standard and terminal courses; and not conferring the baccalaureate degree; (2) an educational institution requiring for admission as a regular student, completion of the tenth grade of a standard high school, or its equivalent; offering four years of work, of which the first two are on the senior high school level, while the last two are similar to those given in two year junior colleges, as just defined; (3) an educational institution offering three years of work consisting of either the senior year of high school plus two years at college level.

Public Junior College. A junior college in which the control is vested in a board of control elected by the voting public or appointed by the governor or other public official. Usually includes the state type junior college.

⁵ Unless otherwise indicated all definitions are from; Carter V. Good, Dictionary of Education, Phi Delta Kappa, Homeward, Illinois, 1946.

Private Junior College. A junior college in which the control is invested in a board of control of single individual or individuals.

Four Year Junior College. A junior college, which in addition to the freshman and sophomore years, includes the last two high school, or preparatory school years, organized and operated as a single unit; in public school systems usually a part of a so-called "six-four-four" system.

Two Year Junior College. A junior college consisting of the freshman and sophomore college years only; the prevailing type, including more than ninety per cent of the junior colleges of the country.

Terminal Education. Education giving specific preparation along vocational lines or occupations only semi-professional and other levels which will qualify students who finish them for immediate places in specific life occupations; and of giving general education for citizenship and for life to other students who cannot continue formal education beyond the junior college.

Industrial Education. A generic term including all educational activities concerned with modern industry and crafts, their raw materials, products, machines, personnel and problems. It therefore includes both⁶ industrial arts and vocational industrial education.

Industrial Arts. The name applied to all forms of shop work and industrial drawing taught in elementary schools, junior high schools, high schools and possibly in colleges when the chief purpose is general education and not specifically vocational in nature. This term was evolved during the early part of the 20th century and is almost universally used today to refer to non-vocational shop work and industrial courses in the public schools.⁷

⁶ John F. Friese, Course Making in Industrial Education, The Manual Arts Press, Peoria, Illinois, 1946, pp. 7.

⁷ DeWitt Hunt, "A Series of Proposed Definitions," (Unpublished paper, Department of Industrial Arts Education and Engineering Shop, Oklahoma A. & M. College, Stillwater, Oklahoma, 1947), pp. 2.

Industrial Arts Education. The term usually used to refer to professional teacher education courses of college level.⁸

Vocational Education. Any form of education whose primary purpose is the training of an individual for a wage earning occupation is vocational education. This form of education includes preparation for wage earning pursuits in agriculture, industry, business, home making, or in the lower grade professions. Vocational education is usually of less than college level. Post high school vocational industrial education is frequently called technical training.⁹

Technical Institute. Schools providing specialized curriculums including high level trade courses for college level students and scientific courses leading to employment as specialists in factories and industries.¹⁰

In order to acquire an understanding of the problems of the junior college it will be necessary to study the junior college movement from the time it originated to the present date. Chapter II will be devoted to a study of the history of the junior college movement and its contribution to the American system of education.

⁸ Loc. cit.

⁹ Loc. cit.

¹⁰ H. P. Hammond, Technical Institutes, (Unpublished paper presented to the Southeast Section of the Society for the Promotion of Engineering Education, Nashville, Tennessee, April 26, 1946.)

CHAPTER II

THE EVOLUTION OF THE JUNIOR COLLEGE

The junior college did not have a definite and concise beginning nor has it had an unwavering career. It has more or less "mushroomed" with little uniformity of purpose and plan, but for such a young institution--approximately a half century--it has made remarkable advancement toward fulfilling a need in the American educational system.

A. ORIGIN OF THE JUNIOR COLLEGE MOVEMENT

The origin of the junior college movement may be discussed from four points of view, namely (1) university amputation, (2) high school elongation, (3) college decapitation, and (4) original creation.¹ "University amputation" is interpreted as the separation of the first two years of college work from the university, which, in the final analysis, is of secondary or preparatory school nature, thus leaving the higher institution free to concentrate on a more effective, specialized course. "High school elongation" is the adding of one or two years of work of advanced secondary nature to the high schools thus

¹ Walter C. Eells, American Junior Colleges, American Council on Education, Washington, D. C., 1940, p. 10.

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¹ Walter C. Eells, American Junior Colleges, American Council on Education, Washington, D. C., 1940, p. 10.

and graduates had the title of "Associates in Arts" conferred upon them. Few universities have followed this pattern, although there has been some tendency in a number of universities and senior colleges to separate the administration of the upper and lower divisions on the same campus. The idea of junior college by way of university "amputation" seems to have had no permanent effect on the public educational system. It has remained for a smaller denominational college to be the first to actually abandon the first two years of work and concentrate its full effort on the true university specialization of the junior, senior and graduate years. The distinction of being the first to abolish the freshman and sophomore years of work belongs to the College of the Pacific, Stockton, California.

The College of the Pacific was first granted a charter in 1851, thus becoming the first incorporated college in California. In 1933 the lower division of the college was organized into an experimental or general college. In 1935 the city of Stockton was granted permission to organize a public college after the attorney general ruled it legal. The college rented to the Stockton Board of Education the facilities available on its campus for the proposed junior college. At this time the College of the Pacific turned over its general college thus surrendering completely the freshman and sophomore years, thus becoming the first liberal arts college, privately owned, to restrict its academic offerings to a junior year, a senior year and one year of graduate study. The colleges are operated entirely separately except for the dean of men and women.²

² Glenn R. Pease, "Unorthodox Academic Wedlock", School and Society, February 24, 1940, p. 232.

High School Elongation. President James R. Angell of Yale stated in 1915 that the immediate motivation for junior colleges came not so much from universities, although much has been done by these institutions through agitation of educational ideals, but rather from the high schools and the intelligent public supporting them.³

The first post-high school work conducted in a high school seems to have been in East Side High School of Saginaw, Michigan, in 1895. The course in Latin, mathematics, English and history were evidently given in preparation for university credit, and by 1897, eight students had been graduated from the University of Michigan in three years after entrance. The Joliet Junior College in Joliet, Illinois, was established in 1902 and is given the title of being the oldest junior college still in existence. It is interesting to note that William Raney Harper, who is sometime known as the father of the junior college and the previously mentioned proponent of the university segregation, exerted a direct influence on the founding of the Joliet Junior College. Of this Eells says:

The superintendent of Joliet, J. Stanley Brown, was a strong Baptist, as also was President Harper. It was while they were together at Baptist conventions that they talked over plans for educational progress, and Harper succeeded in inspiring Brown with some of his zeal and

³ Walter C. Eells, The Junior College, Houghton Mifflin Company, Boston, Massachusetts, 1931, p.53.

and enthusiasm for educational reorganization. This led to the establishment of junior college work at Joliet High School--almost ten years before the second public junior college now existing appeared in California.⁴

By 1904, similar work was being done in Muskegon, Michigan; Philadelphia, Pennsylvania; St. Joseph, Missouri; Goshen, Indiana, and eighteen semipublic institutions throughout the country. The state of Missouri seems to have taken an early lead in accrediting large high schools for one or two years of college level work. Perhaps the most notable example of early junior colleges in Missouri was the Kansas City Junior College organized in 1915. Since there were no universities or four year colleges in the immediate vicinity of this large city, the junior college was formed as a result of the local need and demand for high school extension to a fifth or sixth year.

College "Decapitation". The third aspect of the origin of the junior college--college decapitation--like the first has remained unpopular among our public institutions. The denominational and private colleges here again have been the first to recognize the expediency of lopping off the upper years of college work of the weaker four-year colleges in order to accomplish more completely the first two years work, leaving the specialization of the last two years to

⁴ Walter C. Bells, American Junior Colleges, American Council on Education, Washington, D.C., 1940, p. 13.

the better qualified universities. Probably the earliest application of this plan was in the systematic reorganization of the Baptist colleges of Texas in 1897-98. Realizing the weakness and subsequent likelihood of failure of several competing four year institutions under its auspices, the American Baptist Education Society formulated a plan whereby the Baylor University at Waco became the head of an affiliated system which included a senior college, Baylor College at Belton and three junior colleges, Decatur, Rusk, and Howard Payne. The junior colleges surrendered their junior and senior years and offered only freshman and sophomore work, and in return for this concession the Waco University and Belton College accepted their graduates with full junior standing.

Although Texas is the pioneer in this field, a stronger, if somewhat later, example is to be found in Missouri. In this state the University of Missouri by 1928 was admitting with full junior standing, students from eighteen junior colleges. Other struggling four year colleges, especially those privately controlled, have followed the examples of these two states and voluntarily reduced themselves from inadequate institutions of learning to efficacious two year colleges.

Independent Creation. The fourth and final origin of the junior college is the independent creation. The first college of this type to be noted is the Modesto Junior College,

California, which was established in 1921 under the District Law of 1921 authorizing such creations. It was followed in a short time by the organization of six other similar junior colleges. It is this classification that the origination of most of the nations polytechnical and agricultural and mechanical arts junior colleges is to be found.

B. THE GROWTH AND THE PRESENT STATUS
OF THE JUNIOR COLLEGE

The junior college in slightly less than a half century has grown in number from eight institutions in 1900 to 648 in 1945-46. Over this period it has been the most rapidly growing unit of the American educational system.

Enrollment Data. The growth in numbers of colleges is no more phenomenal than the growth in enrollment in junior colleges. From one hundred students in 1900, the enrollment climbed to the official figure of 294,475 for the year of 1945-46, and the estimate for the year just completed, 1946-47, indicates that an all time high of no less than four hundred thousand will be reached.⁵

The growth by numbers and enrollment may best be observed by studying statistics of Table I.

⁵ C. C. Colvert, "A Half-Century of Junior College", Junior College Journal, February, 1947, p. 244.

TABLE I. JUNIOR COLLEGE ENROLLMENT BY YEARS

| Year | Number of Colleges | Enrollment |
|------|--------------------|------------|
| 1900 | 8 | 100 |
| 1915 | 74 | 2,363 |
| 1922 | 207 | 16,031 |
| 1929 | 405 | 54,438 |
| 1935 | 521 | 107,807 |
| 1941 | 610 | 236,162 |
| 1943 | 624 | 314,349 |
| 1945 | 584 | 249,788 |
| 1946 | 591 | 251,290 |
| 1947 | 648 | 294,475* |

* Enrollments are given for the previous completed academic year; that is, the enrollment reported for 1947 is for the college year, 1945-46.

Total enrollment in the junior colleges, it will be noted, was greatly reduced in 1943-44 and 1944-45 as a result of the nation-wide drafting of eighteen year old youth into the armed services, but turned upward for a new high in the first postwar year of 1945-46.

A further comparison of the junior college growth may be made by geographical groups. The North Central region has been one of great fertility for the production of the junior college since their beginning. This area had in 1945-46, sixteen per cent of the junior college students of the nation and 34.3 per cent of the total number of junior colleges. The largest percentage growth in enrollment between 1944-45 and 1945-46 occurred in New England where the number of students increased by eighty per cent.

A comparison of the enrollment and number of colleges by geographical groups for the academic years of 1938-39 and 1945-46 is shown in Table II.

TABLE II. JUNIOR COLLEGE ENROLLMENT BY GEOGRAPHICAL GROUPS

| Region | Number of Colleges | | Enrollment | |
|----------------------|--------------------|---------|------------|---------|
| | 1938-39 | 1945-46 | 1938-39 | 1945-46 |
| New England | 39 | 51 | 7,260 | 14,844 |
| Middle States | 58 | 71 | 9,228 | 21,634 |
| North Central | 217 | 216 | 57,383 | 62,839 |
| Southern | 172 | 197 | 41,003 | 59,275 |
| Northwest | 24 | 27 | 6,880 | 13,750 |
| Western (California) | 64 | 76 | 73,669 | 119,896 |

The largest number of institutions is in California with seventy six followed by Texas with sixty two. There are twenty one states with ten or more junior colleges each.⁶

Types of Control. One notes with interest the increasing percentage of junior colleges which are publicly controlled. (Table III.)

TABLE III. TYPES OF CONTROL

| Year | Total | Public | Private | Percentage Public |
|------|-------|--------|---------|-------------------|
| 1915 | 74 | 19 | 55 | 26 |
| 1922 | 207 | 70 | 137 | 34 |
| 1931 | 436 | 178 | 258 | 41 |
| 1940 | 575 | 258 | 317 | 45 |
| 1947 | 648 | 315 | 333 | 49 |

⁶Winifred R. Long, "Analysis of Junior-College Growth", Junior College Journal, February, 1947, p. 228.

The percentage of the total number of students enrolled in publicly controlled junior colleges has risen even more rapidly. Of the 1945-46 enrollment, seventy three per cent of the total enrollment was in publicly controlled institutions whereas only twenty five per cent was in publicly controlled institutions in 1915. This is possibly the result of the fact that private school boards of control, who usually operate for profit, see the possibilities first and do the pioneering with the public institutions following their precedent. Of the three hundred thirty three privately controlled colleges in 1945-46, one hundred ninety eight were denominationally controlled, with the Catholic, Baptist and Methodist heading the group in that order.

C. THE JUNIOR COLLEGE CURRICULUMS

One of the greatest developments which has taken place in the last fifty years among the junior colleges has been in the field of the curriculum.

Preparatory Curriculums. The curriculums in the original junior colleges were practically an exact duplicate of the first two years of the senior colleges. This was almost compulsory since the junior colleges, being new, were dependent upon the universities and senior colleges for accrediting. Consequently, for a number of years, the curriculums were dictated by the institutions of higher learning. Later some of the junior colleges extended their curriculums to include

the traditional freshman and sophomore courses in engineering, pre-medicine, pre-law, and business.

Terminal Curriculums. Such large numbers of students began to attend junior colleges the demand for an expansion and broadening of the offerings to include curriculums other than those preparatory to entering the higher university soon led to an organization which included terminal courses. In 1917, the reported number of semester hours offerings of terminal courses was 17.5 per cent of the total. Koos reported that in 1921, twenty eight per cent of the total semester hour offering of the junior colleges were terminal courses.⁷ In Eells' report of 1930 the proportion of terminal courses is found to have increased to thirty three per cent of the total offerings.⁸ These percentages would tend to indicate a slowing down of the offerings of the terminal courses, the possible reason for which, being the rapid growth of the number of junior colleges. New junior colleges usually offer only the traditional types of curriculums and add the terminal types only after they are well established. Too, terminal courses require rather expensive equipment, and a lack of funds often prevents the offering of such courses.

⁷ Leonard V. Koos, The Junior College Movement, Ginn & Company, Boston, Mass., 1925, p. 33.

⁸ Walter C. Eells, The Junior College, Houghton Mifflin Company, Boston, Mass., 1931, p. 485.

D. SUMMARY

The junior college originated with the primary purpose of relieving the universities of preparatory work by adding to the high schools, reducing weak four year colleges and by creating a separate middle institution.

Junior colleges have grown rapidly in both numbers and enrollment with the North Central region having the greatest number of colleges and California having the greatest number of students enrolled.

The junior college curriculums have shown a change from the original college preparatory curriculums offered in the first years of the junior college existence to an increase in the terminal phase.

Serving in the same area as the junior college, yet functionally different, are the technical institutes. To completely cover the training that lies between the high schools and the universities it becomes necessary to discuss the contribution made to education by technical institutions. The following chapter is devoted to a discussion of technical institutes.

CHAPTER III

THE TECHNICAL INSTITUTE

The technical institute had its origin in the mechanical institute established in the first half of the nineteenth century. The earliest recognized institute was the Mechanics' Institute in New York City which was established in 1785. This institute is still in existence today. The Rochester Institute of Technology, another of the early technical institutes, was established a few years after the Mechanics' Institute was founded. Most technical institutes have been located near the highly industrialized areas of the northern states, east of the Mississippi, and in the Pacific Coast States. The state of New York has been, perhaps, the leading state in the nation, both in numbers of institutes and in enrollment. Of the seventy-seven technical institutes recognized by the Society for the Promotion of Engineering Education, nineteen are located in the state of New York. These seventy-seven institutes may be classified under six main types (Table IV) maritime and federal, state and municipal, privately endowed, extension divisions of colleges and universities, proprietary and Y. M. C. A. schools. The junior colleges, many of which are truly schools of technical nature, has been excluded from this list and to

avoid repetition of discussion they are not discussed in this chapter.

TABLE IV. ENROLLMENTS IN TECHNICAL INSTITUTES

| Type of Institution | Enrollment 1946-1947 | | | |
|--|----------------------|---------------|---------------------|-----------------------|
| | No. | Total | Evening and Special | Total day and Evening |
| Maritime and federal | 9 | 1,289 | | 1,289 |
| State and municipal | 20 | 5,528 | 2,536 | 8,064 |
| Privately endowed | 14 | 4,667 | 8,349 | 13,016 |
| Extension divisions of colleges and universities | 6 | 1,271 | 5,640 | 6,911 |
| Proprietary | 25 | 15,769 | 2,473 | 18,242 |
| YMCA Schools | 3 | 606 | 1,307 | 1,913 |
| Total | 77 | 29,130 | 20,305 | 49,435 |

A. WHAT IS A TECHNICAL INSTITUTE?

A technical institute is a school providing specialized curricula including high level trade courses for college level students and scientific courses leading to employment as specialists in factories and industries.

Characteristics Defining Education of the Technical Institute Type. The term "technical institute" usually denotes a particular type of institute such as the engineering college, and there are technical institutes--a few of them--in the strict meaning of the term. A much broader sector of technical education lies between collegiate engineering

education on one side and vocational training on the other. Operating within this area there are several types of institutions offering a great diversity of educational programs. The great diversity of types of programs makes it difficult to understand and deal with curriculums of technical institute types. Dean H. P. Hammond in his paper presented before the meeting of the Southeastern Section of the Society for the Promotion of Engineering Education, held in Nashville, Tennessee, April 26, 1946, characterizes this area of education of the technical institutes in the following manner:

(1) The purpose is to prepare individuals for positions auxiliary to, but not in, the field of professional engineering.

(2) High school education or the equivalent is required for admission.

(3) The work is essentially technological in nature; it is based upon elementary principles of related physical science, requires the use of mathematics beyond high school level, and employs rational processes rather than rule of thumb methods of solving problems of design, construction and operation.

(4) Programs are briefer, more intensive, and more specific in purpose than are collegiate engineering curricula, though they lie in the same general fields of industrial and engineering practice. Their aim is to prepare for specific technical jobs or lines of activity rather than for broad sectors of engineering.

The term "technical institute" is a generic term rather than a specific term. It covers a whole field of

education that lies between the secondary or the vocational schools and the colleges.¹

B. TECHNICAL INSTITUTES CLASSIFIED

Technical institutes are classified according to type or control as follows: state maritime academies and federal schools, state and municipal technical institutes, privately endowed technical institutes, extension division of colleges and universities, proprietary technical institutes, and Y.M.C.A. schools. There are seventy seven schools in these six classifications with an enrollment of over twenty one thousands.

Maritime and Federal Institutes. There are nine state maritime academies and federal schools. These institutes enrolled 2,257 students in the school year of 1945-46. The United States Maritime Service Officers Schools were discontinued as officers schools during the first half of 1946. In their place a peace time training program for merchant seamen was inaugurated in January, 1947. This program consists of a variety of short, intensive courses offered to both unlicensed seamen and officers. The Army Air Force Institute of Technology at Wright Field, Dayton,

¹Wm. E. Wickenden and Robert H. Spahr and other, A Study of Technical Institutes, The Society for Promotion of Engineering Education, The Lancaster Press, Pa., 1931, Ch.iv, pp.48-88.

Ohio, was established in December, 1945. This school is conducted by the air materiel command. The primary purpose of this institute is to conduct courses that will assure scientific research, technical development and design of air force equipment. Table V, shows the name, location and enrollment of the nine state maritime academies and federal schools.

TABLE V: STATE MARITIME ACADEMIES AND FEDERAL SCHOOLS

| Name | Location | 1946-1947 Enrollment |
|--|----------------------|-------------------------|
| Army Air Forces Institute of Technology ¹ | Dayton, Ohio | |
| California Maritime Academy | Vellejo, Calif. | 150 |
| Maine Maritime Academy | Castine, Maine | 148 |
| Massachusetts Maritime Academy | Hyannis, Mass. | 200 |
| New York Maritime Academy | Fort Schuyler, N. Y. | 330 |
| Pennsylvania Maritime Academy ² | Philadelphia, Pa. | |
| U. S. Maritime Service Off- icers School ³ | New London, Conn. | |
| U. S. Maritime Service Off- icers School ³ | Alameda, Calif. | |
| U. S. Naval School | Anacostia, D. C. | 461 |
| Total | | 1,289 |

¹The Army Air Forces Institute of Technology offers upper-level undergraduate and some graduate-level instruction--students taking 1 or 2 year courses in the College of Engineering or College of Industrial and Engineering Administration. During present term 124 and 63 students were enrolled in these two colleges, respectively.

²No numbers indicated.

³Schools were discontinued as officers' schools during first half of 1946. Effective January, 1947, U. S. Maritime Service instituted a peacetime-training program for merchant seamen.

State and Municipal Technical Institutes. There are twenty technical institutes classified as state and municipal schools. Eleven of this number are institutes located in the state of New York, where perhaps the greatest advancement under this classification has been made in recent years. On April 6, 1946, Governor Dewey of New York signed a bill providing thirty million dollars for the establishment of five state technical institutes. These schools are located at Binghamton, Buffalo, New York City, Utica, and White Plains, New York. These schools are undergoing a program of organization and will be ready to receive students by September, 1947, or earlier. These schools each bear the name of New York State Institute of Applied Arts and Science and will be distinguished from one another by location.

Another significant example of the progress being made by state and municipal technical institutes is the reorganization program of Milwaukee Vocational School. The nine divisions of this school are being consolidated into four major divisions. One will be the new institute of technology, and another will be the new institute of business education.

The total enrollment for state and municipal technical institutes for 1946-47 was 5,528. (Table VI) on following page.

Privately Endowed Institute. The privately endowed institutes were the first schools to undertake the type of training that is found in the area of technical institutes. In this group there are fourteen schools with a total

TABLE VI: STATE AND MUNICIPAL TECHNICAL INSTITUTES

| Name | Location | 1946-1947 Enrollment |
|---|-------------------------|-------------------------|
| Bradford Durfee Tech. Inst. | Fall River, Mass. | 680 |
| Calif. Polytech. School ¹ | San Luis Obispo, Calif. | 1,374 |
| Hartford Trade School | Hartford, Conn. | 1,306 |
| Putnam Tech. School | Putnam, Conn. | 55 |
| Windham Regional Tech. School | Willimantic, Conn. | 145 |
| Milwaukee Vocational School ² | Milwaukee, Wis. | 168 |
| New Bedford Textile Inst. | New Bedford, Mass. | 182 |
| N.Y.S. Agric. & Tech. Inst. | Alfred, N. Y. | 518 |
| N.Y.S. Agric. & Tech. Inst. | Canton, N. Y. | 284 |
| N.Y.S. Agric. & Tech. Inst. | Cobleskill, N. Y. | 272 |
| N.Y.S. Agric. & Tech. Inst. | Delhi, N. Y. | 168 |
| N.Y.S. Agric. & Tech. Inst. | Farmingdale, N. Y. | 673 |
| N.Y.S. Agric. & Tech. Inst. | Morrisville, N. Y. | 341 |
| N.Y.S. Inst. of Applied Arts and Sciences ³ | N.Y.C., N.Y. | |
| N.Y.S. Inst. Applied Arts & Sc. ³ | White Plains, N. Y. | |
| N.Y.S. Inst. Applied Arts & Sc. ³ | Binghamton, N. Y. | 300 |
| N.Y.S. Inst. Applied Arts & Sc. ³ | Buffalo, N. Y. | |
| N.Y.S. Inst. Applied Arts & Sc. | Utica, N. Y. | 132 |
| N. D. State School of Science | Wahpeton, N. D. | 642 |
| School of Industrial Arts | Trenton, N. J. | 824 |
| Total | | 8,064 |

¹The Voorhis Unit of this school is located at San Dimas, California, and has an enrollment of approximately 250 in agricultural courses. This enrollment is not included.

²School is now in a process of reorganization. Vocational Junior College will divide into an Institute of Technology.

³Will open for instruction within a few months.

enrollment of 13,016. (Table VII) The Rochester Institute of Technology, which is one of the older schools, has the largest enrollment of any of the seventy-seven technical institutes. A large per cent of this enrollment is made up of veterans of World War II. One of the newer privately endowed institutes is the LeTourneau Technical Institute of Longview, Texas.

TABLE VII: PRIVATELY ENDOWED TECHNICAL INSTITUTES

| Name | Location | 1946-1947 Enrollment |
|--------------------------------------|-----------------------|-------------------------|
| Tech. Inst. of Alliance Jr. Coll. | Cambridge Sprs. Pa. | 192 |
| Calif. School of Mech. Arts | San Francisco, Calif. | 31 |
| Cogswell Polytechnic College | San Francisco, Calif. | 55 |
| Franklin Tech. Inst. | Boston, Mass. | 1,753 |
| LeTourneau Tech. Inst. of Texas | Longview, Texas | 161 |
| Mechanics Institute | New York, New York | 1,656 |
| Wm. R. Moore School of Technology | Memphis, Tenn. | 250 |
| Ohio Mechanics Inst. | Cincinnati, Ohio. | 1,613 |
| J. M. Perry Inst. | Yakima, Washington | 372 |
| Philadelphia Textile Institute | Philadelphia, Pa. | 335 |
| Pittsburgh Institute of Aero. | Pittsburgh, Pa. | 661 |
| Rochester Institute of Tech. | Rochester, New York | 4,598 |
| College of Aero. U of Sou. Calif. | Santa Maria, Calif. | 180 |
| Wentworth Institute | Boston, Mass. | 1,159 |
| Total | | 13,016 |

Extension Division of Colleges and Universities: The extension division of college and universities comprise a large per cent of the total enrollment in technical institutes. A complete report from all the colleges in the United States is not available. Table VIII, gives a partial list of this class for the year 1946-47. One of the latest additions to this group of technical institutes is the Okmulgee branch of the Oklahoma A. & M. College, Stillwater, Oklahoma. This school was opened in 1946 on the former site of the Glennan Hospital at Okmulgee, Oklahoma. This branch school is for veterans only and two divisions of training are offered. One is for the lower division college, freshmen and sophomores, and the other is the school of technical training. The school of technical training comprises four fields: (1) agriculture, (2) intensive business, (3) foods and (4) industrial training. The length of the courses offered is from three months to two years.

The rapid growth in this type of technical institute may be contributed to the desires of the veterans of World War II to take their training in larger universities and colleges.

Proprietary Technical Institutes. This type of technical institute is the largest classification in numbers of schools. In May, 1947, there were twenty five proprietary technical institutes in operation. These schools had a total

day enrollment of 15,769 (Table IX). (See following page)

The Spartan School of Aeronautics, Tulsa, Oklahoma has the largest enrollment of any school of this type.

TABLE VIII: EXTENSION DIVISIONS OF COLLEGES AND UNIVERSITIES

| Name | Location | 1946-47 Enrollment |
|--|--------------------|-----------------------|
| Fenn College Tech. Institute | Cleveland, Ohio | 850 |
| U. of Minn. Inst. of Technology ¹ | Minneapolis, Minn. | |
| Okla. A & M Sch. of Tech. Trng. | Okmulgee, Okla. | 424 |
| Pennsylvania State College | State College, Pa. | 2,396 |
| Purdue U. Div. of Tech. Inst. | Lafayette, Ind. | 1,020 |
| Utah State Agric. College | Logan, Utah | 2,221 |
| Total | | 6,911 |

¹ No longer have courses in technical institute field.

Y.M.C.A. Schools. There are only three Y.M.C.A. Schools. Two of these are located in Ohio at Dayton and Columbia. The enrollment in the Y.M.C.A. Technical Institutes is to a large extent made up of evening and special students (Table X). The enrollment in all three of the schools are open to both men and women. The total enrollment for this type of institute is 1,913 students, twenty eight of whom are women.

TABLE X: YMCA SCHOOLS

| Name | Location | 1946-1947 Enrollment |
|--------------------------------|---------------------|-------------------------|
| Dayton YMCA College | Dayton, Ohio | 1,156 |
| Franklin Univ. Tech. School | Columbus, Ohio | 412 |
| Washington Technical Institute | Seattle, Washington | 345 |
| Total | | 1,913 |

TABLE IX: PROPRIETARY TECHNICAL INSTITUTES

| Name | Location | 1946-1947 Enrollment |
|--|-----------------------|-------------------------|
| Academy of Aeronautics | LaGuardia Field, N.Y. | 756 |
| Acme School of Die Design | South Bend, Ind. | 212 |
| Aeronautical University | Chicago, Ill. | 1,047 |
| Aero. Ind. Tech. Institute | Oakland, Calif. | 138 |
| American Sch. of Aircraft Inst. | Los Angeles, Calif. | 441 |
| Eliss Electrical School | Washington, D. C. | 328 |
| Bowman Tech. School | Lancaster, Pa. | 130 |
| Cal-Aero Tech. Inst. | Glendale, Calif. | 1,649 |
| Calif. Flyers School of Aero. | Inglewood, Calif. | 200 |
| Casey Jones School of Aero. ¹ | | |
| Central Radio and Tel. Sch., Inc. | Kansas City, Mo. | 1,446 |
| Chicago Tech. College | Chicago, Ill. | 2,046 |
| Dallas Aviation Sch. & Air Coll. | Dallas, Texas | 337 |
| Embry-Riddle Sch. of Aviation | Coral Gables, Fla. | 398 |
| Milwaukee School of Engineering | Milwaukee, Wis. | 1,343 |
| National Technical Institute | New York, N. Y. | 537 |
| Northrop Aeronautical Inst. | Hawthorne, Calif. | 856 |
| Pan American Navig. Service | N. Hollywood, Calif. | 350 |
| Phila. Wireless Tech. Inst. | Philadelphia, Pa. | 379 |
| Plastics Industries Tech. Inst. | Los Angeles, Calif. | 268 |
| Radio Television Inst., Inc. | New York, N. Y. | 712 |
| RCA Institutes, Inc. | New York, N. Y. | 1,337 |
| Roosevelt Aviation School | Mineola, N. Y. | 986 |
| Spartan School of Aeronautics | Tulsa, Oklahoma | 2,060 |
| Valparaiso Tech. Inst. | Valparaiso, Ind. | 286 |
| Total | | 18,242 |

¹Facilities have been combined with Academy of Aeronautics at LaGuardia Field.

C. TECHNICAL INSTITUTES IN OKLAHOMA

The natural resources of Oklahoma have been a deciding factor in locating new industries in this state. The development of these industries created a need for more workers trained in the semiskilled and skilled trades. To satisfy this need, the technical institutes of Oklahoma were founded. The ever increasing demand for employees trained in this area will justify the establishing of more schools that develop this style of craftsman.

The Spartan School of Aeronautics. This school, sponsored by the Spartan Aircraft Corporation, was founded in 1928 at Tulsa, Oklahoma. Its growth parallels the growth in popularity of the aeroplane. The Spartan School was one the first in the United States to become approved for civilian pilots' training program. This program, sponsored by the United States Government, enabled Spartan to expand its training facilities, and at the outbreak of World War II it was one of the first private schools in the nation to receive a contract from the Army Air Corps to train pilots. The Spartan School also contracted with the Air Corps to train aeroplane mechanics and at the close of hostilities in World War II this school was equipped to offer a complete education in aeronautics. These facilities were made available to our Latin and South American Allies and many students from

these countries were trained, both in flight and maintenance mechanics. The large enrollment at the Spartan School of Aeronautics is due to the popularity of aviation among veterans of World War II. The school is approved by the Veterans Administration for training in all of its branches.

School of Technical Training, Oklahoma A. & M. College,

Stillwater, Oklahoma. The history and purpose of this school was reviewed by Mr. H. P. Adams in a report to the Dean of the Engineering Division.

The School of Technical Training was organized at this institution in 1937 in order to meet the demand for technically trained personnel which was brought about by an increasing industrial development in this area. The purpose of offering this work is to train men and women for callings and functions which occupy an area between the skilled crafts and the highly scientific professions.

Existing educational institutions in this part of the country did not offer any courses organized to meet this need; although leading educators had recommended the establishing of many technical institutes after the first World War.

The Society for the Promotion of Engineering Education made a study and published a report entitled, "A Study of Technical Institutes" in 1931. They found that there was a definite need for this type of educational institution, and that from 25,000 to 30,000 graduates could be absorbed in industries each year. Approximately 250 institutes of this type would be needed to meet this need. Many technical institutes have been organized since that date, and the S.P.E.E. is making an effort to have each of these accredited.

The primary reason for establishing this school in connection with an Engineering college, which was not in accord with recommendations of the S. P.E.E. report, was probably due to the lack of physical equipment for training purposes and leadership interested in this phase of education. All other schools having any suitable equipment

were interested in industrial arts, vocational education on a trade level, or regular college preparatory courses, such as those offered in the Junior Colleges of this state.

The Division of Engineering at this institution was the first to sponsor a technical institute in the Southwest.³

Oklahoma A. & M. School of Technical Training, Okmulgee Branch. In 1946 the Oklahoma A. & M. College received the one million dollar Glennan Hospital at Okmulgee, Oklahoma, for the purpose of organizing a branch school to train veterans of World War II. A working agreement was made between the college and the Veterans Administration to train veterans in the freshman and sophomore years of college work and also to train students desiring technical training in agriculture, intensive business, foods and industry. In May, 1947, the enrollment at this school had reached 424. The school has facilities to care for as many as fifteen hundred students. An enrollment of one thousand is expected for the school year 1947-48.

The Southwestern Institute of Technology. The State Legislature in its session of 1939 changed the name of the Southwestern State Teachers College of Weatherford, to Southwestern State College of Diversified Occupations and

³ H. P. Adams, "Technical Training's Contribution for the Development of a Greater Division of Engineering", (Unpublished department report presented to Edward R. Stapley, Acting Dean of the Division of Engineering, September 1, 1946)

enlarged its educational purposes to fields other than teacher training. The name was again changed in 1941, to Southwestern Institute of Technology, and further broadening of the curriculum offerings was recommended. This led to the addition of the Division of Technical Training and the Division of Pharmacy to the School of Education. Participation by the school in federally subsidized war training programs enabled it to add facilities for technical training. In 1942 the Southwestern Institute of Technology was awarded a contract to train enlisted army personnel in aircraft engine mechanics. The School of Aeronautics served the Army Air Force in this capacity for nineteen months. At the close of this contract the facilities that were used in training army personnel were made available to civilians. The most important department in the Division of Technical Training of Southwestern Institute of Technology is the Horology department. The facilities of this department are utilized to train physically handicapped individuals in the watch repair trade. This vocational rehabilitation program is sponsored by both the State Department of Vocational Rehabilitation and the Veterans Administration.

The establishment of a technical institute in connection with a four year teacher training program is quite unique. There is a great difference in the philosophy of the two programs and whether these two types of education can exist in the same institution will be decided by the future.

The Southwestern Institute of Technology may definitely be classified as a technical institute today. Courses of one and two year duration in aviation motors, automobile mechanics, carpentry and cabinet making, cosmetology, refrigeration and air conditioning, horology and radio are offered. At the present time none of these curriculums have been accredited by the Engineers' Council for Professional Development.

D. SUMMARY

The technical institute is not a new idea of education. The beginning of this type of training antedates that of the public junior college movement. It has been influenced by demand from industry for personnel possessing qualifications obtained by technical training. This influence is noted in that the majority of technical schools are located near the heavily industrialized area. With decentralization of industry, the technical institutes have been established in the southern and western as well as the eastern and northern parts of the United States. The emphasis placed upon the technical institutes by our preparation for entrance into World War II has influenced the establishment of new institutes. The demand for higher education by the returning veterans has sharply increased the enrollment in the technical institutes. Post war progress is demanding training of this type.

Oklahoma is becoming more industrialized and the need for technical training is ever increasing. The schools of

Oklahoma doing this type of training are being utilized by great numbers of students. There is a definite need for more institutions offering this specialized training to support the new industries of a growing state. A better utilization of the present training facilities of Oklahoma would relieve, to some extent, the shortage of skilled personnel essential to further development of industries in this state. The junior colleges of Oklahoma, because of their general nature, could serve better their purpose if the curriculums of technical nature were emphasized in their offerings. A study of the present status of the junior college of Oklahoma is necessary in order to understand the increasing possibilities of technical training in this area. Chapter four is devoted to a study of the junior colleges of Oklahoma.

CHAPTER IV

THE JUNIOR COLLEGES OF OKLAHOMA

Although the junior college institution is relatively new in Oklahoma, the state is fourth in the nation in number of junior colleges. However, it is only twenty-eighth in enrollment. This is explained by the fact that a large portion of junior colleges in Oklahoma enroll very few students. In 1945-46, one half of the states' junior colleges enrolled less than fifty students each, while another one-fourth enrolled less than one hundred each. The junior colleges of Oklahoma, both publicly and privately controlled, have been classified under four headings: (1) state owned junior colleges, (2) municipal junior colleges, (3) independent junior colleges, and (4) independent specialized training.¹ The colleges are discussed under these classifications in order to make a comparison of the services being rendered to the people of Oklahoma by these institutions.

A. STATE OWNED JUNIOR COLLEGES

The Third Biennial Report of the Oklahoma State Regents for Higher Education lists seven state owned junior colleges,

¹ Oklahoma State Regents for Higher Education, Third Biennial Report, June 30, 1946, pp. 10-11.

members of the Oklahoma state system of higher education. These colleges are well distributed throughout Oklahoma with no junior college within one hundred miles of another. All seven junior colleges of this classification are two year colleges, but none of them offers training beyond the sophomore year of college work.

(1) Northern Oklahoma Junior College. By an act of the Legislative Assembly of Oklahoma Territory passed on March 1, 1901² the money was appropriated to establish the University Preparatory School to be located at Tonkawa. The following September this school began to function with an enrollment of 227 young men and women. An act of congress dated June 2, 1906, donated to the school a section of land adjoining the City of Tonkawa to be sold and the funds received therefrom to be used to provide additional buildings. In 1909 a similar act granted another tract of land for the same purpose. In 1920 the college department was established and the institution became a fully accredited junior college and preparatory school. An act of legislature in 1941 changed the name to Northern Oklahoma Junior College.

Purposes. The college serves a three fold function, namely, (1) to prepare students for service in a useful and profitable vocation, (2) prepare students to enter professional

² Session Laws, Oklahoma Territory, 1901, p.196.

schools in senior colleges and universities, (3) affords an opportunity for a two year liberal education.

Location. Northern Oklahoma Junior College is located at Tonkawa, approximately one hundred miles north of Oklahoma City. The region is primarily agricultural.

Enrollment. Admission to the junior college is open to all graduates from high schools accredited by the Oklahoma State Department of Education or recognized accrediting agencies of other states. Students who do not have a minimum of fifteen high school units may enroll and remove their deficiency by substituting five hours of college credit for each deficient high school unit. Students who wish to enroll for special courses that cannot meet the above requirements may be admitted on permission from the president on recommendation of the head of the department in which the work is to be taken.

Curriculums. The college offers curriculums in liberal arts, commerce, and industrial arts leading to the degree of Associate in Arts. These curriculums are offered for the purposes of preparing the student for entrance into the junior year of university work, and terminal curriculums are offered to prepare students for specific occupations so arranged as to meet graduation requirements.³

³ Announcement Bulletin, Northern Oklahoma Junior College, 1947-48, pp. 8-9.

Industrial Education: The industrial education department consists of a metal shop, mechanical drawing shop, printing shop and a woodworking shop. Courses are offered to meet the needs of students preparing to continue their education in four year colleges and universities. Terminal education curriculums are offered to meet the needs of students who plan to complete their education in the junior college. The terminal student has a choice of the following curriculums: (1) mechanical drawing, (2) automotive service, (3) machine shop practice, (4) electric arc and acetylene welding and (5) printing and linotype operation.

The instructional education staff consists of three full time teachers and one coordinator of distributive education.

(2) Oklahoma Military Academy. Oklahoma Military Academy is one of the essentially military state institutions in the United States. The school at Claremore was originally established by an act of the second state legislature, its name being "Eastern University Preparatory School."⁴ In 1919, however, the school was renamed "Oklahoma Military Academy". The act of 1919 stated the purpose of the school as follows:

Character of school-- the said Oklahoma Military Academy shall be known and designated by the name of the Oklahoma Military Academy, and shall be a school of

⁴ Session Laws, Oklahoma, 1909, H. B. 362.

secondary grade. The curriculum for the school shall include vocational education and military training. The vocational education herein provided shall be confined to the vocations of auto-mechanics and buildings trades and shall be below college grade.⁵

Purposes. The purposes of the Oklahoma Military Academy are (1) to provide thoroughly trained officers for the army of the United States, (2) to insure a sound basic education, even more thorough than in time of peace, so that the graduate can carry out his duties during the emergency and be equipped to resume his education at its end, (3) to develop and guide the cadet mentally, morally, and physically to best serve his country and state.⁶

Location. The Oklahoma Military Academy is located in northeastern Oklahoma, one mile west of the city limits of Claremore.

Enrollment. Only young men meeting the physical requirements and with at least one year successful completion of high school work are admitted to this institution.

Curriculums. The college offers two year curriculums in pre-engineering, pre-medicine, business administration, and pre-law in addition to a four year curriculum in military science and tactics.

Industrial Education. The industrial education

⁵ Session Laws, Oklahoma, 1919, p. 219.

⁶ Announcement Bulletin, Oklahoma Military Academy, 1947-48, p. 11.

offered at this institution consists of courses in mechanical drawing and descriptive geometry to meet the freshman and sophomore requirements for pre-engineering students.

The instructional staff consists of one teacher.

(3) Murray State School of Agriculture. The establishment of the Murray State School of Agriculture was in accordance with an act of the first legislature, approved May 20, 1908. This school received its first student October 5, 1908, to become the first agriculture school of secondary grade in Oklahoma. In 1922 the State Board of Agriculture authorized this school to add the first year of college work and in 1923 the second year was added. A question arose as to whether or not this could be done under the act creating the institution. To settle the matter, the legislature was asked to sanction by proper enactment, junior college work. This was done by an act of the legislature and was signed by the governor March 17, 1924.

Purpose. The purpose of this institution as outlined in the act was to offer in addition to secondary subjects, two years of college training in agriculture, dairying, animal husbandry, science, mechanical arts, home economics, educational and other allied and auxiliary subjects.

Location. The Murray State School of Agriculture is located at Tishomingo, county seat of Johnson County, and the original location of the capitol of the Chickasaw Nation.

Enrollment. The enrollment is open to all graduates of standard high schools. Students who have not completed high school may enroll conditionally and finish their high school work within one year from date of enrollment.

Curriculums. The Murray State School of Agriculture offers two year curriculums in general agriculture, home economics, engineering, industrial education, commerce, and arts and sciences.

Industrial Education. The courses offered in the industrial education department are for students majoring in industrial arts education and for students desiring to prepare themselves to enter skilled trade. The courses offered are: industrial arts drawing, bench woodwork, wood turning, general shop, carpentry, machine woodworking, machine shop practice, foundry practice and pattern making. Two full time teachers are employed in this department.

(4) Eastern Oklahoma Agricultural and Mechanical College. The Eastern Oklahoma Agricultural and Mechanical College was established in 1909 by the second legislature as the Oklahoma School of Mines and Metallurgy. It was founded with the purpose of teaching technical courses in mining and metallurgy with mathematics, chemistry and engineering included in a four year engineering course. This college began its first session in September, 1910, in rented quarters in Wilburton. In April, 1911 the

college was moved to its present site. This school was closed for two years during World War I, but reopened in 1920. Besides the regular courses in mining and metallurgy, it was operated as a school of trades and industry for training disabled veterans of World War I. These trades courses and mining engineering were discontinued in 1924. The eleventh legislature in 1927 changed the name of the institution to Eastern Oklahoma College and gave it the power to grant degrees. It especially authorized the offering by the college of vocational and special courses in trades and industries below college level. In 1935 the fourteenth legislature passed house bill No. 454 authorizing Eastern Oklahoma College "to care for, train and educate dependent youth and orphans of the state who had attained the equivalent of the common school educational standard and who by reason of being poor, dependent, neglected or orphaned may be unable to be cared for, trained or educated otherwise".⁷ Under the provisions of this bill students have come from most sections of the state. The seventeenth legislature, at the suggestion of the governor, changed the name of the school to Eastern Oklahoma Agricultural and Mechanical College and placed it under the control of the State Board of Agriculture.

⁷ Session Laws, Oklahoma, 1935, H. B. 454.

Purposes. The purposes of the Eastern Oklahoma A. & M. College is to offer the first two years of university preparatory work to students and to offer such terminal educational courses as to meet the needs of the students of eastern Oklahoma.

Location. The college is located in Wilburton, county seat of Latimer County. The principal occupations of the area are agriculture and mining.

Enrollment. The Eastern Oklahoma A. & M. College is a coeducational school. The majority of its enrollment is made up of students from Pittsburg, Haskell, LeFlore, Latimer, Pushmataha, and McCurtain Counties. A small number of students are from the state of Arkansas.

Curriculums. The curriculum offerings include agriculture, commerce, pre-engineering, home economics, industrial education, and arts and science.

Industrial Education. It is the purpose of the industrial arts department to provide technical shop training for students desiring and needing this type of education. The curriculum offered is designed to meet the needs of the student preparing to major in industrial arts education in a four year college. The curriculum is made up of courses in woodworking, general shop, welding, mechanical drawing, auto mechanics, machine shop, foundry and forging. The college employs one full time instructor in this department.

(5) Cameron State Agricultural College. Cameron School of Agriculture College was established as one of the six secondary schools of Oklahoma by an act of the first legislature on May 20, 1908. It was opened with an enrollment of 108 students in September, 1909, in temporary housing quarters. In December, 1910, the school was moved to its present site, two miles west of the city of Lawton. This acreage was donated to the State of Oklahoma by a group of civic minded business men headed by the Lawton Chamber of Commerce as an inducement to locate the college at Lawton. The name "Cameron" was given the school as a mark of respect to E. D. Cameron, an early Oklahoma State Superintendent of Schools. The act giving Cameron State Agriculture School a college status was approved March 24, 1927. At that time the name of the institution became "Cameron State School of Agriculture and Junior College".⁸

Purposes. The purposes of the Cameron State Agriculture College is to give a two year course of college work locally, equivalent to that obtained in the first two years of standard universities, which will adequately prepare students for the upper division and specialization of senior colleges. Its terminal function is to give specific vocational training courses for special occupations on

⁸ Announcement Bulletin, Cameron State Agricultural College, 1946-47.

the semiprofessional level qualifying students who finish them, an immediate place in a definite life occupation.

Location. The college is located one mile west of the city of Lawton, in the county of Commanche in southwestern Oklahoma. The principal occupation of the area is agriculture.

Enrollment. Both young men and young women make up the enrollment of Cameron State Agriculture College. The majority of these students are from the seven counties adjoining Commanche County. The accumulative enrollment for this school in 1946-47 was 815.

Curriculums. The Cameron State Agriculture College offers two year curriculums in agriculture, home economics, engineering, industrial arts, commerce, and arts and science. In addition to these two year curriculums, terminal courses are offered in commerce, radio service, electricity, and agriculture.

Industrial Education. The industrial education department at Cameron State Agriculture College offers a two year curriculum in industrial arts education and a one year curriculum in electrical repair and radio service. The course offerings consist of woodworking, drawing, machine shop, foundry practice, pattern making, welding, electricity, radio and bench metal. Three full time teachers are employed in the industrial education department.

(6) Connors State Agricultural College. The Connors State School of Agriculture was organized in 1907 with academic work of high school grade only. In 1927 the state legislature added two years of college work and changed the name of the school to Connors State Agricultural College. The purpose of the college was stated in this last enactment, and was phrased in the following manner:

The State Board of Agriculture is hereby authorized and empowered to provide and establish two years of additional college work, and all such work shall include courses in agriculture, dairying, animal husbandry, science, mechanical arts, home economics, educational and other allied and auxiliary subjects.

Purposes. The purpose of the college is to prepare students for entrance into universities with junior standing and to offer terminal educational courses to meet the needs of those students desiring to enter a vocation at the end of two years training.

Location. Connors State Agricultural College is located in southern Muskogee County near Warner, Oklahoma.

Enrollment. The enrollment at Connors State Agriculture College is made up of young men and women from eastern Oklahoma and western Arkansas. Completion of fifteen units of high school work is required for all regular students enrolling at the college.

⁹ Session Laws, Oklahoma, 1921.

Curriculums. Preparatory curriculums in liberal arts, agricultural, business, engineering, home economics, medical, and music offered. While special emphasis is placed on agriculture and home economics, the basic curriculums for those desiring to major in business education, engineering, arts and sciences, and auto mechanics are also offered.

Industrial Education. The industrial education department at Connors State Agriculture College offers a two year curriculum in industrial arts education. The courses offered in this department consist of woodwork, auto mechanics, drawing, farm mechanics and carpentry. One full time teacher is employed in this department.

(7) Northeastern Oklahoma A. & M. College. Northeastern Oklahoma A. & M. College was established in 1919 as the "Miami School of Mines". A special Board of Regents authorized under House Bill number 552, at once organized the school so that it offered only college work, largely of a scientific nature. It operated as a school of mines until 1925, when, during a special session of the legislature, the name was changed to Northeastern Oklahoma Junior College, and general collegiate courses were added to the curriculum. Control of the college remained in the hands of the special Board of Regents until 1939 when Northeastern Oklahoma Junior College and six teacher's colleges were placed under the supervision of the Board of Regents of the State Colleges.

At this time a farm was purchased and agricultural courses were added.¹⁰

Purposes. The three-fold function of Northeastern Oklahoma A. & M. College is to prepare young men and women for intelligent and constructive citizenship, to provide them with a background for a rich cultural life, and to fit them for their life work.

Location. The college is located in Miami, county seat of Ottawa County, northeastern Oklahoma, near the edge of the Tri-State Lead and Zinc Mining fields.

Enrollment. The enrollment is made up of students from Ottawa, Craig, Tulsa, Mayes, Delaware and Roger Counties with a number of students from southeast Kansas and southwest Missouri. The enrollment has increased steadily since the college was made a two year agriculture and mechanical college.

Curriculums. The curriculums in various fields are outlined to fulfill the freshman and sophomore requirements leading to degrees in academic and professional fields, in arts and science, business administration, engineering, home economics, pre-law and pre-medicine. In addition to the college preparatory curriculums, a broad program of terminal education is offered.

¹⁰ Announcement Bulletin, Northeastern Oklahoma A. & M. College, 1945-46.

Industrial Education. The industrial education department of Northeastern Oklahoma A. & M. College was reorganized in September, 1945, after a discontinuance of two years. Additional equipment was added to the department and a new instructional staff was employed. The number of courses offered in this department was increased and the following named curriculums were added: radio service and repair, refrigeration and air-conditioning, general woodworking, electric arc and acetylene welding, industrial drafting and general metal working.

A new shop building contributed by the Bureau of Public Facilities will be completed by August 1, 1947. This additional shop space will enable the department to offer the following additional two year curriculums: maintenance mechanics, automotive mechanics, and electrical trades. Four instructors are employed in the industrial education department of Northeastern Oklahoma A. & M. College.

B. MUNICIPAL JUNIOR COLLEGES

For more than twenty five years in Oklahoma, some public school districts have sponsored a thirteen or fourteenth year of instruction in the community.¹¹ These two years of work at college level have become known as the "municipal junior college".

¹¹ Oklahoma State Regents for Higher Education, Third Biennial Report, 1946, p. 39.

History. In 1920 Muskogee Junior College was organized by the Board of Education. This college in its beginning, offered only one year of post high school work. Frederick, Muskogee and Lawton were other school districts undertaking early the establishment of the municipal junior college. During the early thirties, the increasing demand for this type of college was reason for establishment of a considerable number of these institutions. Table XI is an interesting survey of the existence of municipal junior colleges in Oklahoma over the past twenty-seven years. Since 1920 thirty-six schools have, at one time or another, maintained junior colleges. The number active in any one year, however, has varied from three to twenty, the peak years being 1938-39, 1939-40 and 1940-41. The Bartlesville school has been the only school district in Oklahoma to reorganize¹² on the 6-4-4 plan.

Accreditation. Accreditation of these local programs for one or two years of junior college work is supervised by a state committee on accreditation of municipal junior colleges. This committee is selected pursuant to Section 889, Title 70, O.S., 1941, page 2376, under the direction of the State Board of Education and the State Regents. The committee consists of ten members: two from the State Department of Education; two from the State Regents for Higher Education; two from

¹² The Oklahoma Junior College News Letter, Vol. 1, No. 2, Feb. 1947, p. 2.

TABLE XI: SCHOOL SYSTEMS OFFERING JUNIOR COLLEGE WORK

| | #22 | #23 | #24 | #25 | #26 | #27 | #28 | #29 | #30 | #31 | #32 | #33 | #34 | #35 | #36 | #37 | #38 | #39 | #40 | #41 | #42 | #43 | #44 | #45 | #46 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | #23 | #24 | #25 | #26 | #27 | #28 | #29 | #30 | #31 | #32 | #33 | #34 | #35 | #36 | #37 | #38 | #39 | #40 | #41 | #42 | #43 | #44 | #45 | #46 | #47 |
| Altus | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Bartles- | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| ville | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Bristow | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Carnegie | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Chandler | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Chickasha | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Drumright | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Duncan | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Elk City | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| El Reno | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Frederick | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Henryetta | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Hobart | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Holden- | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| ville | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Hollis | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Lawton | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| McAlester | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Mangum | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Maskogee | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Okemah | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Okla. City | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Cap. Hill | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Okmulgee | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Pauls | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Valley | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Pawhuska | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Pawnee | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Ponca | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| City | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Poteau | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Pryor | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Sapulpa | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Sayre | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Seminole | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Shidler | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Wewoka | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Wetumka | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Woodward | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| Totals | 4: | 4: | 7: | 3: | 6: | 6: | 7: | 4: | 5: | 5: | 9: | 13: | 15: | 17: | 16: | 17: | 20: | 20: | 20: | 19: | 12: | 10: | 8: | 8: | 15 |

the municipal junior college seeking accreditation; two from the University of Oklahoma; and two from Oklahoma A. & M. College. The committee undertakes to visit the local schools involved, keeps certain records as to courses offered, equipment, enrollment, and faculty qualifications; and affords some administrative guidance as to standards.¹³

Means of Financial Support. The original municipal junior colleges in Oklahoma were usually financed by a tuition charge. The school district furnished housing and in most cases furnished part-time instructors from the high school faculty. The demand was so great for this type of education, and the need so apparent that in 1939, the state legislature enacted into law measures making it possible for the public school district to finance the junior college with funds from the regular school budget.¹⁴

Curriculum Offerings. The majority of municipal junior colleges have not attempted to offer anything more than a preparatory curriculum in line with work offered by the major state colleges in the first two years. A few offer short courses of terminal nature to meet the needs of the communities, but these are non-credit.

¹³ Oklahoma State Regents for Higher Education, Third Biennial Report, 1946, p. 39.

¹⁴ Superintendent of Public Instruction, Twentieth Biennial Report, 1944, p. 87.

Enrollment. During the war years, enrollment decreased in the municipal colleges until one district after another discontinued operation of a junior college. In 1944-45, only nine such colleges were in operation with a total enrollment of 394. In the first post-war year, 1945-46, the number of municipal colleges was thirteen with a total enrollment of 654. Although this number constituted one-half of all the junior colleges in the state, the enrollment was only slightly more than one-fourth of all students enrolled.

C. THE INDEPENDENT JUNIOR COLLEGE

The independent junior colleges of Oklahoma might well be called the "church schools" for a survey reveals they are all sponsored by denominational organizations. When Koos made his study in 1922, the only junior college he reported for Oklahoma was an independent one, Oklahoma Presbyterian College for Girls at Durant. In 1945-46 the independent junior college comprised one-fifth of all junior colleges in Oklahoma, but enrolled only one fifteenth of the total enrollment. All of the independent colleges are dependent financially upon endowments and tuition charges.

St. Gregory's College. The oldest Oklahoma junior college still in existence is the St. Gregory's College of Shawnee, which was first organized as the Catholic University

of Oklahoma and reorganized in 1915 as St. Gregory's College. The college is for men and in 1945-46 had only five enrollees as compared with twenty-six in 1939-40. The curriculum is of preparatory nature. The school shares the high school instructional staff, having no full time instructor of its own.

Pentecostal Holiness Junior College. The most recently organized independent junior college in the state is the Pentecostal Holiness Junior College of Oklahoma City. It was organized in 1946 under the control of the Pentecostal Holiness Church. Its first year of existence ended with seventy students enrolled.

Tulsa Apostolic College. The Tulsa Apostolic College was established in 1944 under the control of the United Pentecostal Church. In 1945-46 the enrollment for the school was fifty-two.

Monte Cassino Junior College. In 1936 under the auspices of the Benedictine Sisters of the Catholic Church, the Monte Cassino School for Girls was founded. Junior college instruction was instituted in 1931 when the name was changed to Monte Cassion Junior College. The school shares its plant and faculty with a high school. The curriculum is preparatory. The degree of Associates in Arts is conferred upon the graduates.

Bacone College. Bacone College, a coeducational institution, was established in 1880 as the Baptist Christian

Training School for the purpose of preparing "native preachers and teachers for a more effective Christian work among all Indian Tribes".¹⁵ The school was opened with an enrollment of three students in 1880, thus being the oldest college in Oklahoma. The college was located at Talequah the first year of its existence but was moved to Bacone in 1881. Until 1910 both white and Indian students were admitted, but since that time enrollment has been restricted to Indians. It is the only private institution of higher learning in the United States exclusively for American Indians. Until 1927 the Master's degree was offered, but at that time the college became a junior college. The curriculum offerings are of preparatory nature with adjustments made to educational and vocational plans of students. Enrollment for 1945-46 was forty seven students.

D. INDEPENDENT SPECIALIZED TRAINING

Schools offering training in some specialized technical field are the schools under this classification.

Spartan School of Aeronautics. The Spartan School of Aeronautics is the only specialized training college recognized by the State Board of Regents as being a member of the Oklahoma state system of higher education.¹⁶ The

¹⁵ Announcement Bulletin, Bacone College, 1945-46, p. 6.

¹⁶ Announcement Bulletin, Spartan School of Aeronautics, 1947.

school was established in 1928 in one small hangar and has grown until it is recognized as having the largest enrollment of any privately owned technical institute in the United States.

Purpose. The purpose of this school is to equip young men and women for the aviation industry.

Location. Spartan School of Aeronautics is located on fifty acres of land adjoining the municipal airport about five miles from the heart of down town Tulsa.

Curriculum. The school of aeronautics is made up of the college of aeronautical engineering, schools of mechanics, meteorology, radio, management and ground school for pilots and restricts its training to the aviation industry.

Educational Standing. The college of aeronautical engineering is recognized by the State Board of Regents for Higher Education as a private college under Section 4, Article A, Constitution of Oklahoma. Its facilities, personnel, and curriculum are regularly inspected by the state for conformance with the standards prescribed. The school of flight and school of mechanics are approved by the Civil Aeronautics Administration. The school of radio is approved by the Federal Communications Commission.

E. SUMMARY

An analysis of the offerings of the junior colleges in Oklahoma indicates that these schools are only partially fulfilling the purposes for which they were created. The legal status given these schools by the state legislature definitely left the way clear for these institutions to offer a broad and varied program of education to meet the needs of the state and the community in which they are located. It is quite obvious at the present time that the junior colleges are failing in this respect. This failure is due not to one factor, but to many factors of which the following are of paramount importance:

1. The failure of the state legislature to provide funds for the operation of a broad program of education embracing all four of the functions as outlined in Chapter I. Insufficient funds to operate a junior college program meeting all four functions has forced the administrators of these schools to exclude the more costly terminal curriculums and guidance programs.

2. The failure to recognize the needs of the community by those who administer the junior college program. This is due largely to a failure to evaluate and revise the curriculum to meet the needs of a changing and growing society.

3. The inability of the junior college to employ the type of teacher needed to offer curriculums other than academic type. The salary schedule of the junior college does not permit it to compete with industry for the services of individuals capable of teaching the subject matter needed by many of the junior college students.

4. The influence of the academic teacher upon the curriculums offered. Since the majority of teachers in the junior college are individuals with only an academic background, it is very easy for the schools to follow the line of least resistance and offer a program top heavy with college preparatory courses.

5. The failure of the junior college to utilize the resources of its surrounding community. This is very evident in the state supported junior college. Since the funds to operate the school comes from the state,

The junior colleges of Oklahoma very definitely are serving the purposes of popularizing education and preparing students for entering colleges and universities with junior standing. Credit should be given them for their marked success in these two functions.

Industrial education is offered in all seven state junior colleges. Table XII shows the present status of industrial education in the state junior college.

The need of a broader offering of terminal courses is being felt by the junior colleges of Oklahoma. Most of these colleges have made some effort to satisfy this need. A more thorough understanding and a better organization of the terminal curriculums is needed if schools are to serve these youth in this capacity. In the following chapter terminal education will be discussed more in detail.

CHAPTER V

TERMINAL EDUCATION IN THE JUNIOR COLLEGE

Graduation marks the end of formal education for seventy five to eighty per cent of all junior college graduates. Therefore, the responsibility of providing these youth with the skills, the information, and the personal qualities to assume their place almost immediately in adult life lies with the junior college. That the fulfillment of this function is far from realization is evidenced in the fact that sixty six per cent of junior college students are enrolled in work preparatory to entrance into higher education. This coupled with the fact that only twenty five per cent enroll in higher education is impetus to the junior college to offer a more adequate and attractive terminal program enabling its graduates to earn a better living and at the same time live a better life.

A. A PHILOSOPHY OF TERMINAL EDUCATION

With the increasing complexity of American life has come a desire on the part of many individuals to acquire deeper and broader understandings in order to cope with that complexity. This together with the need of these same individuals of acquiring semiprofessional skill has led to the development of the type of training commonly referred to as "terminal education".

Existing Factors Influencing American Education. A definite change in the pattern of education has taken place in the past twenty five years. There is an almost entire agreement that the whole youth population should have the opportunity for post high school education.¹ The change has been primarily the result of two factors. The population is changing to one with a higher ratio of "oldsters", thus giving youth more competition in the labor market. This, along with humanitarian interest in young people, has tended to delay the initial entrance of youth into the field of employment. In 1910 over seventy five per cent of boys between the ages of sixteen and nineteen were gainfully employed, whereas in 1940 the percentage had fallen to less than fifty.²

The second influencing factor in the changing educational pattern is increased technological methods. The use of new technical methods has resulted in shifting occupational patterns, increased leisure time, greater interdependency of the world and waning home influence on youth. Any change in occupational patterns will obviously necessitate some change in educational offerings. Newer technical methods in factories producing more goods with fewer men will lead inevitably to more leisure time. This adds to the responsibilities of the

¹ George F. Zook, "Changing Patterns of Junior College Education", Junior College Journal, 16:411, May, 1946

² Walter C. Eels, Why Junior College Terminal Education?, Amer. Asso. of Junior Colleges, Washington, D. C. 1941.

college the need for teaching people how to enjoy and benefit from cultural life and contribute to it. Advances in methods of communications and transportation have drawn the nations together into "one world", and it is more important than ever before that the country have more fully informed citizens if democratic government is to be safe and effective. Progress in the technical fields has made it possible for women to leave their homes for employment or outside social activities thus diminishing the influence of the home on the youth. Here again education is burdened with a new responsibility.

The Nature of Terminal Education. The function of the public junior college may be described as twofold: (1) to prepare the university preparatory student for junior standing or for professional study or specialization in the institutions of higher learning, (2) to prepare that seventy-five per cent group who terminate their formal training at the end of junior college for an effective entrance into the world of business and industry upon graduation from the junior college. The first function has been adequately administered by the junior college, but the second function is practically an untouched area. Sexson and Harbeson have enumerated six points for junior colleges in establishing a terminal program.

(1) The public junior college should become a community institution. The exclusive preoccupation of the American educational system with the juvenile population is a little ridiculous, and has been beneficial neither to the system nor the country... (it) has divorced the college from the sustained interest and support of adults.

(2) The public junior college should break away from the standard college tradition. With enrollments in which from two-thirds to three-fourths of its student body are headed for business and industry rather than the university the public junior college can no longer follow the lead of the standard college... In short, it must forget the standard college and develop a program of education that will minister to the needs of the students whom it serves.

(3) The public junior college must train students to function in a democratic society. The campus must be turned into a democratic self-governing community... In short, life on the campus must become a segment of reality in the most significant period of human existence, not a preparation for something which may or may not be experienced in the dim and distant future.

(4) The public junior college must concentrate on the needs of the terminal student. This does not mean that the needs of the university preparatory student will be ignored. The history of the secondary school has shown that there need be no fear of such a danger... Huge numbers are attempting the university preparatory curriculum in which for them failure will be inevitable... To continue the highly academic university preparatory courses for such students means ultimately to drive them out of school under the stigma of failure with little or no preparation for the realities of the life they are destined to live.

(5) The public junior college must develop an adequate guidance and placement program. In the old days when virtually the entire enrollment was headed for the university, guidance was no problem. Today, however, with the vast range of abilities and human interests exhibited in a heterogeneous population, an adequate guidance program is a sine qua non for an effective service of the student body.

(6) The public junior college must develop a program of evaluation. There is far more experimentation under way in the junior college than evaluation... It is doubtful whether any experimentation is justifiable if it is not followed by thoroughgoing evaluation.³

³John A. Sexson and John W. Harbeson, The New American College, Harper and Brothers, New York, 1946, pp. 134-136.

B. DEVELOPING A TERMINAL CURRICULUM

More than mere course-making must be taken under consideration if the terminal educational program is to prepare students to earn a better living and enjoy a more successful personal life. The terminal curriculum must be offered as a unified program of occupational training courses and general education courses for the total development of the individual student.

Establishing the Need. The first step in establishing the need for a curriculum is identifying the occupational and cultural needs of a community and the needs of the students. The San Francisco Junior College has used this thought as its guiding principle in its terminal program.⁴ Occupation by occupation the college surveys the community as each proposed curriculum is considered. This is done by a well organized plan which eliminates duplicated effort but keeps the terminal curriculum up to date. In addition to finding the community needs, the needs of the students, both youth and adult, are measured. In the Bakersfield Junior College in California

⁴A. J. Cloud and W. C. Marsh, "A Terminal Program Dovetailed with Industry", Junior College Journal, 16:10, Sept., 1945.

this has been done with success by means of surveys of aptitudes, interests and plans of high school youth in its region.

Organizing the Curriculum. One person alone cannot organize the curriculum for a college because this needs community participation. Of this Roy E. Morgan and Walter R. Hibbard, Jr. write:

If educators are to be aware of these (occupational) changes and keep abreast of them, there is evident need for closer liaison between education and industry...To put it another way, job analysis not only is a sound basis for curriculum construction, but is also a method of bringing together the practical and the theoretical, with advantages to both.⁵

The junior colleges with the most noteworthy terminal curriculums have developed them through the efforts of advisory committees composed of interested and alert leaders of the community who give the necessary time and thought to the problem. Course planning is also very important to the success of terminal curriculum. Junior college administrators should familiarize themselves with existing courses in other junior colleges, but "lifting" courses from other catalogs is hazardous to the program. Neither should administrators expect the preparatory courses to completely fill the needs of the terminal curriculum, since terminal students must concentrate in two years that which the preparatory students will complete

⁵ Roy E. Morgan and Walter R. Hibbard, Jr., "Building a Curriculum to Meet Industrial Needs", Junior College Journal, 17:100 Nov., 1946.

in four to six years. The curriculum supervisors usually find the terminal students rebellious to the standardized general education courses; so it becomes necessary to organize the courses around activities in the life of the students offering them in such a manner that the student can see the resultant value in his own life.

Determining terminal course requirements requires much thought and planning. Most terminal curriculums require two years for completion. Books on the junior college, community surveys and advisory committees are the popular sources of information for terminal course making.

Administering and Supervising the Curriculum. One of the principle problems of the terminal curriculum administrator is the terminal instructor. As yet universities have provided no specific training for terminal instructors, so it remains for the administrator to use academically trained teachers, without the occupational point of view, or to fit industrialists, without benefit of teacher training, into terminal curriculums. The task of converting either of these into a good terminal instructor is no small task.⁶

Another supervisory duty is to create and sustain an interest and active participation on the part of the community in developing the terminal program.

⁶ Phebe Ward, Terminal Education in the Junior College, Harper and Brothers Publishers, New York, 1947, p. 81.

Evaluating the Curriculum. Evaluating the curriculum refers to those methods of determining to what extent educational objectives in terms of student occupational competency and personal adequacy have been achieved. Occupational evaluation may be made by means of using performance tests and performance-on-the-job ratings. This of course must have the coordination of the employer, and is a vital reason for community understanding and participation in the terminal program. The personal adequacy attainment is more difficult to evaluate. It can be accomplished by conference with graduates, their employers and their associates to determine changes in attitudes. An evaluation of this kind, however, may grow cumbersome, ill-organized and biased if care is not exercised in its planning and recording. More objective evaluation may be made of personal adequacy by a continuous testing program which requires some type of permanent machinery for administering the program. This department has the responsibility for selecting, constructing, administering, scoring and interpreting the examinations.

The junior college administrators must realize that although evaluation is ordinarily considered the last step in curriculum development, the evaluation of a terminal curriculum is the criterion by which successful curriculum revision is effected. Therefore, evaluation should be considered as important as any other step.

Revising the Curriculum. Continuous revision of the curriculum depends much on the results of the evaluations of the curriculum. It has been the error in the case of many terminal programs to continue the offering of a curriculum in its original form although the need may have long passed. With an alert advisory committee, a tireless coordinator, and a cooperative administration, curriculums can be adapted to new needs before they become useless from low enrollments. A good illustration of this occurred in the San Francisco Junior College when the floriculture curriculum enrollment became very small, the facilities and faculty were turned into use for vegetable-gardening adult classes. With the advent of the war, it evolved into a city wide service for victory-garden programs.⁷

C. PERSONNEL SERVICES OF TERMINAL EDUCATION

"Probably the most important factor in successful technical education in the junior college is the effective functioning of a guidance and personnel services", states Walter C. Eells.⁸ Too often the institutions have failed to recognize the variety of social and educational background of their students and placidly ignored the need for guidance. For

⁷ Phebe Ward, Terminal Education in the Junior College, Harper and Brothers, New York, 1947, p. 98.

⁸ Walter C. Eells, Present Status of Junior College Terminal Education, Amer. Asso. of Junior Colleges, Washington, D. C., 1941, p. 122.

an undetermined reason sixty six per cent of junior college students are enrolled in preparatory courses but only about one fourth of the junior college enrollment continue higher education. It is obvious that the most of the forty one per cent should have been guided into a terminal curriculum suited to their needs.

Student Aids in Selecting a Curriculum. It is important that reliable information and data be placed before the student in helping him select the proper curriculum. Having this data before him, the guidance personnel must determine by interviewing, testing, and conferring with the student the characteristics of the student requisite to various occupations. Institutions offering terminal programs have found a growing need for aptitude testing, the results of which must be correlated with employment fields of a community. After the student has been directed into a particular curriculum, it is important to maintain a counselling service for there always exists maladjustments both training and personnel.

Aiding Students in Securing Jobs. A Placement Bureau in the junior college is of great value to both the students and the college. Since the college has guided and trained the student it is better qualified to select a job satisfactory to the training and temperament of the applicant.

Proper placement creates good will, both on the part of the employer and employee. The community soon recognizes the value of this service and will rely on the bureau to furnish many of the needed employees. The college gains in the advertising it receives from both the good job it has done in training the individual for employment and the satisfactory manner in which the graduate was placed in employment.

Providing Personnel Services for Adults. The service of the placement bureau should be available to all adults of a community as well as the graduate of the college. Good counseling many times causes the adult to realize the need for additional training. As a result, the college gains in enrollment. The cost of this service is nominal since the organization of the bureau is on a permanent basis. The least the college can gain from this service is the good publicity that is bound to follow a satisfactory placement. This contact with the adult will enable the college to acquaint the public with the educational opportunities available in the junior college.

D. SUMMARY

Terminal education in the junior college is recognized as a necessity if the college is to accomplish the purposes for which it is intended. The changing pattern of education emphasized the trend toward this type of training. Terminal

curriculums must be well planned and well executed to meet the needs of a changing society. The first step in developing a program of terminal education is to establish the occupational and cultural needs of the community. This step should precede any aims or objectives. Organizing terminal curriculums is no easy task. The most successful programs of terminal education have resulted from the cooperation of the community and the school. Good teachers are of great importance in administering a terminal curriculum. The difficulty of securing the desired type of teacher is one of the greatest problems confronting the administrator. The evaluating and revising of the curriculum is a never ending task if the school wishes to keep abreast of the community it serves.

The guidance function of the junior college contributes much to terminal education. Good guidance consists of selecting a proper curriculum for the student, guiding the student while in training, placing the student in employment and serving the student on the job.

In the following chapter the preliminary work essential to the establishment of terminal curriculums is exemplified.

CHAPTER VI

THE INFLUENCE OF THE SURROUNDING INDUSTRY ON NORTHEASTERN OKLAHOMA A. & M. COLLEGE

Oklahoma has made much progress in agriculture, particularly as a livestock producer. Scientific research on agricultural problems indicates the continued progress in this broad field. However, the employment trend in agriculture has been steadily downward. The production of oil and gas, which in times past has accounted for as much as half the income of our people, must inevitably decline notwithstanding the discovery of new fields. Oklahoma cannot build a future solely on the production of exhaustible mineral resources, however much the production may temporarily stimulate business and industry. It is primarily to the manufacturing industries--the processing and fabrication of our raw materials, both agricultural and mineral--that Oklahoma must look for future economic progress. The development of additional manufacturing enterprises is one of the most pressing problems confronting Oklahoma today.

Concentration of industries and workers in a few large cities of the industrial North, East and costal cities is beginning to be recognized as a national danger. Industrialists are beginning to move the factories to the great Southwest. Oklahoma is sharing in this industrial tide. The decentralization movement is not merely from one region

to another but from large cities to smaller communities. Exemplary of this movement is in the location of the \$7,500,000 B. F. Goodrich tire factory at Miami, Oklahoma. It would appear that Henry Ford's ideal of the industrial partnership of agriculture and industry is becoming a reality.

A. THE COMMUNITY SERVED BY NORTHEASTERN
OKLAHOMA A. & M. COLLEGE

A study of the enrollment at Northeastern Oklahoma A. & M. College will indicate that over seventy five per cent of the total enrollment of this college comes from homes located within fifty miles of Miami, Oklahoma (Table XIII) The general needs of this community may be interpreted from the personal needs of the individual students from this area. Proof of this fact may be obtained by reviewing personnel records in the guidance center at this college. Most of the students attending the junior college at Miami are native citizens of northeastern Oklahoma with an unusual aptitude for industrial employment.

General Boundaries. A circle, with a radius of fifty miles, will include as its outer limits the northwest corner of Arkansas, the southwest corner of Missouri, the southeast corner of Kansas and the northeast corner of Oklahoma. The community within twenty five miles of the point where Oklahoma, Kansas and Missouri join is sometime referred to as the "Tri-state Area". In this area is located the Tri-state lead and zinc fields, the largest of its type in America.

Counties and Cities. The Oklahoma counties located in the district served by Northeastern Oklahoma A. & M. College are Ottawa, Craig, Nowata, Rogers, Mayes and Delaware. Students from these counties comprised seventy four per cent of the enrollment for the first semester of 1946-47. The number and percentage of students enrolled from each county are shown in Table XIII:

TABLE XIII: ENROLLMENT BY COUNTIES AND STATES AT
NORTHEASTERN OKLAHOMA A. & M. COLLEGE
FALL SEMESTER, 1946-47

| County or State | Number of Students | Per Cent of Total |
|--------------------|--------------------|-------------------|
| Ottawa | 316 | 53- |
| Craig | 43 | 7 |
| Mayes | 26 | 5- |
| Delaware | 24 | 4 |
| Nowata | 6 | 1 |
| Rogers | 17 | 3 |
| All other counties | 72 | 12 |
| Kansas | 39 | 7- |
| Other states | 40 | 7- |
| Total | 583 | 99 |

The principle cities of the area served by Northeastern Oklahoma A. & M. College and the distance of each from the college at Miami are shown in Table XIV.

TABLE XIV

CITIES OF NORTHEAST OKLAHOMA WITH POPULATION OF 1,000 OR OVER
(In Ottawa, Craig, Nowata, Rogers, Mayes and Delaware Counties)

| City | Population | Miles from Miami* |
|----------|------------|-------------------|
| Miami | 15,000 | 0 |
| Afton | 1,261 | 15 |
| Chelsea | 1,642 | 48 |
| Commerce | 2,422 | 4 |
| Grove | 1,093 | 26 |
| Nowata | 3,904 | 52 |
| Picher | 5,848 | 10 |
| Pryor | 3,000 | 52 |
| Vinita | 5,685 | 30 |

* By highway

B. THE TYPES OF INDUSTRIES IN NORTHEAST OKLAHOMA

In discussing the industries located in northeast Oklahoma it will be necessary to limit the discussion to certain types. These types are restricted to concerns of major importance that should directly affect the curriculums offered at the Northeastern Oklahoma A. & M. College.

Mining Industry. The story of the lead and zinc mines of northeast Oklahoma is an interesting one. Mining as an active industry began in 1891 north of Commerce. The rich lead and zinc vein northwest of Commerce was discovered in 1905. This discovery was shared by Miami, Oklahoma business men who were the founders of the Commerce Mining and Royalty Company, the first mining company to operate in this field.

Mining today is a highly mechanized industry and

requires a high degree of skill on the part of the workers. The payroll titles or job classifications of this industry reveal that there are forty-two distinct job classifications. Of these forty-two types of jobs thirty-one, or seventy-four per cent of the total, require the workmen to use tools and power equipment and exercise a high degree of skill in the performance of his job. Contrary to most popular belief the mining industry today is not one of drudgery but is a highly mechanized business. This fact can be verified by observing the great number of small maintenance industries located in the mining district such as machine shops, welding shops (electric arc and acetylene), blacksmith shops, automobile repair shops and others. It is estimated that for every employee working underground three men are required to maintain and install the equipment he uses.

The number of employees working in the one hundred and twenty-three mines in the tri-state area will vary from time to time. It is estimated that fifty-three per cent of the 2,740 laborers working at jobs from common labor to skilled trades in Ottawa County are working in the mining industry or industries directly related to mining. The wage scale for the mining industry is from seventy-five cents to two dollars an hour for a forty hour week. "Time and one-half" is paid for eight hours work above forty hours and "double time" for all work over forty-eight hours a week. The following trades are closely related to the mining industry.

1. Machinist
2. Automobile Mechanics
3. Welder (arc and acetylene)
4. Carpenter
5. Draftsman
6. Plumber and pipe fitter
7. Electrician
8. Maintenance mechanic
9. Blacksmith
10. Sheetmetal worker

Manufacturing Industries. The northeast part of Oklahoma is rapidly becoming a manufacturing area. The availability of cheap electrical power is one of the incentives for locating manufacturing industries in this area. This part of Oklahoma has access to hydro-electric power plants with a capacity of 530,000 kilowatts.

The largest manufacturing concern located within fifty miles of Northeastern Oklahoma A. & M. College is the B. F. Goodrich Tire Plant located at Miami, Oklahoma. This plant was completed in 1944 and at the present time employs 1,150 employees. Most of these workers are engaged in manufacturing operations. The skills required for these workers are highly specialized and training for these jobs must be accomplished on the job. Since an employee does only one operation, the time required to become proficient at the task is short. Most employees working at tire manufacturing proper obtain full pay status within three weeks from the time they are employed. The wage scale for this type of employee ranges from ninety cents an hour to one dollar and eighty-three cents an hour. The average for the entire plant is one dollar and forty-two cents an hour. It is not

uncommon for an employee to earn from seventy-five dollars to one hundred dollars a week (forty eight hour week). As a stimulus for greater production each worker is paid a bonus for all work completed over a quota. Many employees work entirely on a piece-work basis. Table XV shows a break-down of the personnel of the B. F. Goodrich Plant.

TABLE XV

EMPLOYMENT AT THE B. F. GOODRICH PLANT, MIAMI, OKLAHOMA (June, 1947)

| Type of Personnel | Number | Per Cent of Total |
|--------------------------------------|--------------|-------------------|
| Administrative | 173 | 15 |
| Maintenance of Grounds, Buildings | 27 | 2 |
| Manufacturing | 820 | 72 |
| Maintenance of Equipment | 130 | 11 |
| Total | 1,150 | 99 |

These figures are based on the employment of 1,150 persons.

This number will vary from time to time.

The personnel employed to maintain the plant equipment are classified by the following job classifications:

1. Power plant engineer
2. Boiler tender
3. Refrigeration mechanic
4. Acetylene welder
5. Electric arc welder
6. Machinist
7. General mechanic
8. Electrician
9. Instrument man
10. Pipe fitters
11. Pipe insulator

12. Painters
13. Carpenter
14. Sheet metal mechanic
15. Oiler mechanic

These employees are paid on an hourly basis. The rate of pay varies from one dollar and thirty-six cents an hour to two dollars and twenty-five cents an hour for a forty hour week. The personnel officer reported that the percentage of turnover for this type of employee was less than fifteen per cent each year. Many of the employees of this group have been employed by this firm since it began operation.

Many small industries are located in Miami and the neighboring cities. At Quapaw, Oklahoma, the General Power Company manufactures pumps and power units. This concern has a modern foundry and a production machine shop. In addition to the standard products manufactured at this plant many custom built pieces of equipment are manufactured for the mining industry. The employees at this firm are classified as pattern makers, foundry men, machinists, automobile mechanics and general mechanics of semi-skilled nature. The plant employees twenty-seven full time workers in the shop.

The Landis Steel Company at Picher, Oklahoma, operates similarly to the General Power Company at Quapaw. It specializes in products manufactured from steel plate. This company also does custom manufacturing for the mining companies.

Table XVI shows the major manufacturing industries of Oklahoma located within fifty miles of the Northeastern Oklahoma A. & M. College.

TABLE XVI: MANUFACTURING INDUSTRIES OF NORTHEASTERN OKLAHOMA

| Name of Company | Product Manufactured | Location |
|-------------------------------|--|------------|
| Earl Hemphill Co. | : Sludge tables, wood products | : Commerce |
| Mayfield-Mitchell Co. | : Concrete forms | : Commerce |
| C. A. Wagner Const. Co. | : Commercial lime | : Fairland |
| Oklahoma Leather Products Co. | : Leather goods | : Grove |
| Banfield Packing Co. | : Meat Products | : Miami |
| B. F. Goodrich Co. | : Tires | : Miami |
| M. W. Bowden Co. | : Planing Mill Products | : Miami |
| Doan's Radiator & Tin Shop | : Skylights, ventilators, : tanks, cornices | : Miami |
| W. L. Dumus Mfg. Co. | : Canvas, Sheet metal Products | : Miami |
| Hausman Food Co. | : Potato chips | : Miami |
| Nassey Mattress Factory | : Mattresses | : Miami |
| Miami Cheese Factory | : Butter, cheese | : Miami |
| Miami Tin Shop | : Awnings, skylights, tanks : ventilators, cornices | : Miami |
| Patterson Mfg. Co. | : Work clothes | : Miami |
| Taylor Mfg. Co. | : Furniture | : Miami |
| Dixon Mfg. Co. | : Novelties | : Miami |
| Edson Mfg. Co. | : Metal products | : Miami |
| Kipps Machine Co. | : Wagon and truck bodies | : Miami |
| Miami Concrete Co. | : Concrete products | : Miami |
| Bobb Supply Co. | : Machine shop products | : Picher |
| Cox Machine Co. | : Machine shop products | : Picher |
| Eagle-Picher Co. | : Lead, lead products | : Picher |
| Hale's Screen Door Co. | : Screen doors | : Picher |
| Landis Steel Const. Co. | : Metal products | : Picher |
| General Power Co. | : Industrial units | : Quapaw |
| Salina Saw Mill | : Lumber | : Salina |
| Anderson Machine Co. | : Precision machinery | : Vinita |
| Bob White Mfg. Co. | : Floral plant bands | : Vinita |
| C. P. Clouse Co. | : Brooms | : Vinita |
| Dalquest Hdwe. Co. | : Tin, sheet metal products | : Vinita |
| Dunlop Upholstering Co. | : Upholstered furniture | : Vinita |
| J. B. Ferrill Sawmill | : Lumber | : Vinita |
| Grand River Dam | : Electric power | : Vinita |
| Haven Outdoor Adv. Co. | : Outdoor signs, displays | : Vinita |
| Individual Mausoleum Co. | : Concrete burial vaults | : Vinita |
| Gail Johnston Co. | : Brooms | : Vinita |
| Kapp Mfg. Co. | : Sunscreen window shades | : Vinita |
| M-I-V-O Co. | : Batteries | : Vinita |
| New York Candy Co. | : Candy | : Vinita |
| Sills Co. | : Foot powder | : Vinita |
| Vinita Dairy Products Co. | : Casein | : Vinita |
| Vinita Sheet Metal Co. | : Sheet Metal products | : Vinita |
| Watson Cabinet Shop | : Built-to-order woodwork | : Vinita |

Service Industries. In addition to the manufacturing industries listed in Table XVI there are over three hundred service industries in the six counties of northeast Oklahoma.

The establishments may be classified as:

1. Automobile service industries
2. Household appliance service industries
3. Blacksmith shops
4. Welding shops
5. Motor rewinding and service shops
6. Cabinet shops

The employee working in the service industries is a very skilled mechanic. The payroll classification of this industry is as follows:

1. Automobile mechanic
2. Welder (electric arc and acetylene)
3. Blacksmith
4. Refrigeration mechanic
5. Radio service mechanic
6. Electrician
7. Appliance mechanic
8. Carpenter and cabinet maker

These types of skilled mechanics are much in demand at the present time.

Building and Construction Industries. The increase in population in that area together with the restrictions of building during the war years has created an acute shortage of houses in Miami, Oklahoma, and the surrounding cities. The extensiveness of the building and construction industry in this area is reflected in the number of building permits pending construction in Miami as of June 1, 1947. At this time there are two hundred, forty seven homes either under construction or under contract. The seven contractors

building houses in this city had enough contracts to keep them busy until late in 1948. The Miami Chamber of Commerce also reported that five business firms on Main Street had completely remodeled their buildings this year, and four new buildings were under construction at the present time. The types of skilled workers employed in the building and construction industries are:

1. Carpenters
2. Brick and stone masons
3. Plumbers
4. Electricians
5. Concrete finishers
6. Tile setters
7. Glass setters(glaziers)
8. Painters

C. THE TYPES OF LABOR NEEDED IN NORTHEASTERN OKLAHOMA

The increased activity due to the removal of building restrictions imposed because of the war has created a shortage of skilled and semi-skilled labor in northeast Oklahoma. The Oklahoma Employment Service reports the demand far exceeded the supply for the month of June, 1947.

Skilled Labor. All major industries of northeast Oklahoma are in need of more skilled mechanics. New industries locating in this area will also require many employees of this type. The shortage of skilled craftsmen indicated a need for training on this level. Employment for at least five years, for any skilled craftsman can be assured.

Semi-skilled Labor. Most of the semi-skilled jobs are being filled by unskilled labor at the present time. This class of employees usually work with the skilled craftsmen. In normal times an applicant for a job of this type would be required to possess certain skills, but at the present time any good workman can qualify for a job in the semi-skilled wage bracket. This practice is creating an acute labor shortage in the common labor classification.

Common Labor. This type of labor practically does not exist in northeast Oklahoma. The Oklahoma Employment Service at Miami reports five requests for each applicant in this classification. This can be partially explained by the fact that Ottawa has no negro population.

D. SUMMARY

The industries in northeast Oklahoma within fifty miles of the Northeastern Oklahoma A. & M. College may be classified under the following four types: mining, manufacturing, service and building and construction. There were 3,172 persons employed in Ottawa County in these industries June 1, 1947. The industry employing the greatest number of these employees is the mining industry. The B. F. Goodrich Rubber Company employs 1,150. The building and construction industries are doing a "boom" business in 1947. This is the result of the removal of restrictions on building imposed during the war and the housing shortage created by

a population increase in Miami from 8,345 in 1940 to over 15,000 in 1947.

The estimated population of the area studied is 460,376. The working population of this area are enjoying better wages at this time than any other period since statehood.

The following list shows the skilled trades found employed in the four major industries of this area:

1. Machinist
2. Auto mechanic
3. Welder (electric arc and acetylene)
4. Carpenter
5. Draftsman
6. Plumber and steam fitter
7. Electrician
8. Maintenance mechanic (general mechanic)
9. Blacksmith
10. Sheetmetal worker
11. Refrigeration mechanic
12. Oiler-mechanic (general mechanic)
13. Painter
14. Instrument man
15. Cabinet maker
16. Furniture maker
17. Appliance mechanic
18. Radio service mechanic
19. Brick and stone masons
20. Concrete finishers
21. Tile setters
22. Glass setters (glaziers)

Employment within fifty miles of Miami, Oklahoma, can be assured any person trained in any of these trades.

In Chapter VII a program of industrial education to meet the needs of the industries located in the community served by Northeastern Oklahoma A. & M. College is proposed.

CHAPTER VII

A PROGRAM OF INDUSTRIAL EDUCATION FOR THE NORTHEASTERN OKLAHOMA A. & M. COLLEGE

It is the responsibility of every junior college to offer youth an opportunity to develop both occupational competency and personal adequacy. Therefore, it should be required of every department of that school to take stock of its existing offerings and to consider the need for developing additional curriculums that should be offered to meet the particular needs of its students and the community.

The first step in organizing a curriculum is to establish the need. This step obviously should precede the objectives and should definitely determine the specific aims of the curriculum. Before the objectives can be formulated it is necessary to identify the occupational and cultural needs of the community and the short and long term needs of the student. The preceding chapter was devoted to determining the needs of northeast Oklahoma. The needs of the community surrounding the Northeastern Oklahoma A. & M. College are defined in terms of twenty two types of skilled trades that are needed in this area. With these clearly in mind this chapter is devoted to developing industrial education curriculums that will satisfy the needs of the students and the community.

A. THE OBJECTIVES OF THE NORTHEASTERN OKLAHOMA A. & M. COLLEGE

Without a goal or several goals one cannot hope to accomplish definite results. The establishment of proper objectives is of great importance to the success of the curriculum. Objectives may be considered on four levels, namely, the course, the curriculum, the department and the school. Each level should contribute to the next above. The realization of the specific objectives of a curriculum should contribute to the attainment of the aims of a department and the objectives of a department should be related in the same way to those of the school.

The Junior College Objectives. As a guide in establishing the junior college objectives the four functions of the college as outlined in Chapter I were considered. With these purposes in mind the following objectives are proposed of the Northeastern Oklahoma A. & M. College:

1. To provide all students with an adequate foundation in general education leading to personal growth and development and to physical and mental health.
2. To prepare the student for effective participation in family life and effective democratic citizenship in a world society.
3. To prepare qualified students for junior standing in standard colleges and universities.
4. To provide vocational training for terminal students, adequate for an effective and immediate entrance into the world of business, trade and industry.

5. To develop a comprehensive program of community education and culture.
6. To provide a program of guidance that will embrace both vocational and educational problems.

The Industrial Education Objectives. In formulating the objectives of the industrial education department two points of view were considered. These views may be stated as the general educational view and vocational education view. Realizing the importance of both concepts two lists of objectives are given.

Industrial Arts Objectives.

1. To enable the student to gain functional knowledge of materials, tools and processes and their relationship to the success and happiness of the individual.
2. To provide experiences that will increase the understanding of modern industry and that will lay the foundation and help determine vocational interest.
3. To develop the ability to read and make working drawings and to recognize quality and design in the products of industry.
4. To develop the ability to maintain and service as far as is practicable and in an efficient manner the common products of industry found in the home.
5. To give experience that will develop social understanding and the ability to work effectively with others as a leader or as a member of the group.
6. To develop the ability to plan and construct projects that will be useful and appreciated by the individual.
7. To provide a wholesome and worthwhile way to use one's leisure time.

8. To develop in the individual the habit of working safely with tools, materials and people and to select a healthful place in which to do his work.
9. To develop the habit of carefully planning one's work in a business-like manner and to eliminate the chance of loitering or wasting time.
10. To develop the ability to select wisely, care for and use properly the things one buys and uses.

Vocational Industrial Objectives.

1. To provide training in trade and industrial manipulative skills which are needed for successful entrance upon or for making progress in trade and industrial jobs.
2. To provide instruction in related technical subjects which are essential in the development of manipulative skills.
3. To provide instruction in the cultural aspects of a vocation which will distinguish a well educated workman from one who is narrowly trained.
4. To develop an understanding of the importance of one's vocation to the welfare of the community and the need for occupational understanding in society.
5. To encourage wholesome understandings between employer and employee and to promote a feeling of good will between the two.
6. To provide for the establishment of worth-while hobbies that will enable one to use his leisure time profitably and enjoyably.
7. To encourage the establishment of pleasant and attractive homes that are morally, socially and economically solvent.
8. To develop the habit of working safely and maintaining healthful working conditions.

The objectives of the department of industrial education should not be looked upon as a list of vague and remote educational ideals but as a list of specific changes which teachers should endeavor to make in the lives of the students. They are the attitudes, habits, and accomplishments which the individual is expected to acquire as a result of the experiences provided for him in the field of industrial education and which will aid in making him happy, useful and successful as a citizen.

B. ORGANIZATION OF THE DEPARTMENT

Proper organization is essential to the industrial education department. Its relationship to the college as a whole must be visualized and clearly understood. The aims of the department must be correlated with those of other divisions of the college. Since the success of a department is measured by its contribution to the success of the college, the industrial education department should operate not as an independent unit but as a part of the whole.

Advisory Committee. An intelligent advisory committee can contribute much to the success of a program of industrial education in a community. There is probably no better means of presenting a program to the community than through a well organized and active advisory committee. This committee should take an active part in formulating the curriculums, publicizing the training, placing the trainees, and

making special requests of the local "powers-that-be".

In organizing and utilizing advisory committees there are several major problems. The selecting of members and making the most of their services is probably the most thought provoking problem encountered. In considering the question of who should serve in this capacity it is necessary to answer in terms of the local situation. The advisory committee for industrial education in the Northeastern Oklahoma A. & M. College should be made up of members from the mining industry, the B.F. Goodrich plant, the building and construction trades, the service trades, and the civic organizations of the community. The size of the committee should be large enough to emphasize its importance yet small enough to perform effectively. The meetings of the committee should be well planned to create an interest and give a feeling of accomplishment. The director or head of the department should assume the responsibility for arranging the meetings and providing a program that will be interesting and worth-while to the members. All meetings should be attended by the president of the college, the dean of instruction, the guidance counselor, and all members of the faculty of the industrial education department. Regular meetings should be held monthly.

Guidance Center. Certain information obtained by the guidance center will determine to a large extent what will be taught in the industrial education department because it

is through this service that the needs of the students are determined. It cannot be over-emphasized that to meet successfully the needs of the students these two departments must work in close cooperation. The duties performed by the personnel of the guidance center are many. The four specific ones concerning industrial education are (1) aiding the student in selecting a curriculum, (2) guiding the student while in training, (3) placing the student in employment and (4) following-up the student to determine what changes should be made in the curriculums. The services of the guidance center should not be compulsory to the students, but if properly administered they will become very popular with them. Too many students do not exercise wise choices in selecting curriculums that are suited to their needs. The guidance officer in most cases can, with the cooperation of the student, determine the best suited curriculums for the individual needs. This service will save much time in preparing a student for employment. Many times while in training students need counsel, both personal counsel and advice pertaining to educational choices. Circumstances sometime necessitate a change in the training program of the individual. The guidance center will be very helpful when consulted in regard to these changes.

A new service of the guidance center will be the employment service. This department is the logical place for a service of this type since the personnel of the center

have access to all the necessary information needed for successful job placement. A placement made by this organization should be satisfactory to both the employee and the employer.

The personnel of the guidance center will perform a valuable service to the industrial education department by compiling information concerning the success and failure of students trained in that department. This information can be used to determine changes needed in the curriculum and to organize new curriculums.

Physical Plant. The physical plant of the industrial education department of the Northeastern Oklahoma A. & M. College is housed in four buildings. This is probably not the most convenient arrangement but is the best that can be afforded at the present time. Each building houses a distinct phase of shop work and is arranged as follows: (a) The South shop building contains the metal working shops. In this building is housed the machine shop, the bench metal shop, the sheet metal shop and the welding shop (electric arc and acetylene). In addition to the shops this building has an office for the instructors and toilet facilities. The supervisor of metal working is responsible to the head of the department for the arrangement and care of this shop. (b) The central shop building houses the refrigeration and air conditioning shop and the automobile repair mechanics shop on the first floor. The drafting laboratory is located on the second floor. In addition to the shops this building

has an office for the head of the industrial education department, a lecture room, a small technical library and reading room and toilet facilities. The head of the department is responsible for the arrangement and care of this shop.

(c) The north shop building is devoted to the woodworking trades. In addition to the woodwork shop this building has an office for the supervisor of woodwork, finishing room, lumber storage and toilet facilities. (d) Located in the north wing of the class room annex building is the radio shop and the electric shop. This building also contains a lecture room and a projection room used by the department. The supervisor of electrical trades is responsible for the care and arrangement of this building.

A request has been made for the construction of a new \$200,000 industrial education building on the campus of Northeastern Oklahoma A. & M. College. This proposed building will house all phases of industrial education program.

Instructional Personnel. There is an almost unanimous feeling among administrators that the junior college instructors must have a greater interest in teaching and in students than other college teachers. In addition he must have a good understanding of the junior college; a fine personality for teaching, and a mastery of his speciality as well as a broad background in related fields. The junior college teacher must live a normal, well adjusted life in order to inspire his students to assume their personal, civic, social and occupational responsibilities.

There are two types of industrial education teachers; both contribute to a well balanced program in this field. One type of instructor is the teacher that has chosen teaching as a profession and has completed a regular course of preparation in the schools of higher education. The other type is from industry. He is a craftsman and knows the trade from within. Many times a person can be found in this category with a college education. This is the most sought for qualification in selecting vocational education teachers in the junior college.

The faculty of the Northeastern Oklahoma A. & M. College is made up of instructors of both types. Two of the four faculty members of this department have sufficient trade experience to qualify as trade teachers. The other members of the faculty are college graduates with majors in industrial education.

The employment of additional faculty members in the industrial education department will be in line with the present policy with perhaps a preference given to applicants with trade experience.

C. CURRICULUM OFFERINGS

The proposed curriculum offerings of the industrial education department are designed to meet the needs of the industries within fifty miles of the Northeastern Oklahoma A. & M. College and the individual needs of the students

enrolling in this college. The twenty-two skilled trades in which a demand for employment exists were considered as a basis for the formulation of the curriculums to be offered. The following eight curriculums should provide adequate training for this area.

The proposed curriculums of the industrial education department were designed to be terminal in nature, but in every type adequate provisions have been made for the student to meet the requirements for the Associate of Arts degree conferred upon students at the completion of two years work in the junior college.

Industrial Arts Curriculum. The industrial arts curriculum is offered for the benefit of the student who has not had an opportunity to take work of this nature in high school. In addition to serving this need it offers to the student who wishes to prepare to become an industrial arts teacher two years of shop work and drawing similar to the courses offered in a four year college or university. Many students will find the courses offered in this curriculum excellent electives that will give credit acceptable in other curriculums.

Freshman Year
(First Semester)

| Course | T | L | C |
|---------------------------|----------|----------|----------|
| 113 English (Composition) | 3 | 0 | 3 |
| 115 Chemistry (General) | 3 | 4 | 5 |
| 112 Engineering Drawing | 0 | 6 | 2 |
| 132 Bench Woodwork | 0 | 6 | 2 |
| 213 American History | 3 | 0 | 3 |
| 111 Physical Education | <u>2</u> | <u>0</u> | <u>1</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 123 English (Composition) | 3 | 0 | 3 |
| 113 Biology or other science | | | 3 |
| 113 Descriptive Geometry | 1 | 6 | 3 |
| 142 Machine Woodwork | 0 | 6 | 2 |
| 152 Wood Turning | 0 | 6 | 2 |
| 102 Shop Practice (General Metal) | 0 | 6 | 2 |
| 121 Physical Education | <u>2</u> | <u>0</u> | <u>1</u> |
| Total | | | 16 |

Sophomore Year
(First Semester)

| Course | T | L | C |
|----------------------------|----------|----------|----------|
| 143 Mathematics (Algebra) | 3 | 0 | 3 |
| 212 Technical Drawing | 0 | 6 | 2 |
| 232 Cabinet Making | 0 | 6 | 2 |
| 222 Care of Shop Equipment | 0 | 6 | 2 |
| 213 Psychology (Education) | 3 | 0 | 3 |
| 113 Government | 3 | 0 | 3 |
| 111 First Aid | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | | | 16 |

(Second Semester)
(Cont. next page)

(Second Semester)

| Course | T | L | C |
|--------------------------------|----------|----------|----------|
| Speech | 2 | 0 | 2 |
| 173 Mathematics (Algebra) | 3 | 0 | 3 |
| 183 Mathematics (Trigonometry) | 3 | 0 | 3 |
| 252 Welding (Acetylene) | 0 | 6 | 2 |
| 242 Carpentry | 0 | 6 | 2 |
| 183 Electricity | 3 | 0 | 3 |
| 211 Safety | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | | | 16 |

General Woodwork Curriculum. The purpose of this curriculum is to train the student for employment in the furniture manufacturing industry or for employment in a cabinet shop doing production and custom work in wood. These trades require the worker to possess a high degree of skill in using all types of hand wood working tools and the ability to operate all types of woodworking machines. Upon completion of this curriculum the student will be qualified to work in the trade as a carpenter or cabinet maker on the journeyman level. The total in-shop training time for this curriculum is 2,712 clock hours.

First Year
(First Semester)

| Course | T | L | C |
|---------------------------------|----------|----------|----------|
| 112 Bench Woodwork | 0 | 6 | 2 |
| 112 Engineering Drawing | 0 | 6 | 2 |
| 103 Shop Mathematics | 3 | 0 | 3 |
| 102 Shop English or 113 English | 2 | 0 | 2 |
| 101 Shop Safety | 1 | 0 | 1 |
| 152 Wood Turning | 0 | 6 | 2 |
| 102 Blue Print Reading | 2 | 0 | 2 |
| 102 Care of Shop Equipment | <u>0</u> | <u>6</u> | <u>2</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|------------------------------|----------|----------|-----------|
| 212 Machine Woodwork | 0 | 6 | 2 |
| 222 Cabinet Making | 0 | 6 | 2 |
| 242 Carpentry | 0 | 6 | 2 |
| 202 Wood and Metal Finishing | 2 | 3 | 2 |
| 203 General Business | 3 | 0 | 3 |
| 122 Technical Drawing | 0 | 6 | 2 |
| 203 Fundamentals of Speech | 3 | 0 | 3 |
| 201 First Aid | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | | | 17 |

Summer Session

| | | | |
|---------------------|---|----|---|
| Production Shopwork | 0 | 24 | 8 |
| or | | | |
| On-the-job Training | | | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|-----------------------------|----------|----------|-----------|
| 223 Advanced Cabinet Making | 0 | 9 | 3 |
| 272 Furniture Making | 0 | 6 | 2 |
| 233 Advanced Carpentry | 0 | 9 | 3 |
| 222 House Planning | 2 | 0 | 2 |
| 213 American History | 3 | 0 | 3 |
| 202 Painting and Finishing | 0 | 6 | 2 |
| 202 Employment Relations | <u>2</u> | <u>0</u> | <u>2</u> |
| Total | | | 17 |

(Second Semester)

| Course | T | L | C |
|-------------------------------------|----------|----------|-----------|
| 273 Advanced Furniture Making | 0 | 9 | 3 |
| 293 Production Woodwork | 0 | 9 | 3 |
| 232 Cabinet and Furniture Designing | 0 | 6 | 2 |
| 203 Industrial Labor Management | 3 | 0 | 3 |
| 113 Government | 3 | 0 | 3 |
| 202 Blue Print Reading | <u>2</u> | <u>0</u> | <u>2</u> |
| Total | | | 16 |

Maintenance Mechanics Curriculum. The maintenance mechanics curriculum is designed to prepare students for employment in the mining and manufacturing industries of northeast Oklahoma. The courses offered in this curriculum will give the student practical experience in the manipulative skills used in repairing and maintaining the equipment used in industry. In addition to the shop work, related information is offered to give the student a broad view of the work he is preparing to do and his responsibilities as a craftsman and citizen of an industrial community.

First Year
(First Semester)

| Course | T | L | C |
|--|---|---|-----------|
| 102 Shop Practice | 0 | 6 | 2 |
| 112 Engineering Drawing | 1 | 3 | 2 |
| 152 Acetylene Welding | 0 | 6 | 2 |
| 102 Shop English or English 113 | 2 | 0 | 2 |
| 132 Woodworking | 1 | 3 | 2 |
| 103 Maintenance and Repair of Mechanical Equipment | 2 | 3 | 3 |
| 213 American History | 3 | 0 | 3 |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|---|---|---|-----------|
| 212 Technical Drawing | 1 | 3 | 2 |
| 103 Shop Mathematics | 3 | 0 | 3 |
| 122 Machine Shop Practice | 1 | 3 | 2 |
| 172 Advanced Acetylene Welding | 1 | 3 | 2 |
| 202 Sheet Metal | 1 | 3 | 2 |
| 103 Theory of Internal Combustion Engines | 2 | 3 | 3 |
| 113 Government | 3 | 0 | 3 |
| Total | | | 17 |

Summer Session

| Course | T | L | C |
|--|---|----|---|
| 108 Maintenance and Repair of Mechanical Equipment | 0 | 24 | 8 |

or
On-the-job Training

**Second Year
(First Semester)**

| Course | T | L | C |
|---------------------------------|----------|----------|----------|
| 203 Job Shop Repair | 0 | 9 | 3 |
| 162 Electric Arc Welding | 1 | 3 | 2 |
| 103 Fundamentals of Electricity | 3 | 0 | 3 |
| 132 Advanced Machine Shop | 1 | 3 | 2 |
| 101 Job Orientation | 1 | 0 | 1 |
| 102 Plumbing and Pipe fitting | 1 | 3 | 2 |
| 202 Employment Relations | 2 | 0 | 2 |
| 101 Shop Safety | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|---------------------------------------|---|---|----------|
| 223 Job Shop Repair | 0 | 9 | 3 |
| 222 House Wiring and Motor Insulation | 1 | 3 | 2 |
| 203 General Business | 3 | 0 | 3 |
| 201 Orientation | 1 | 0 | 1 |
| 112 Forge Practice and Heat Treating | 1 | 3 | 2 |
| Electives | - | - | <u>6</u> |
| Total | | | 17 |

Automobile Mechanics Curriculum. The automobile mechanics curriculum is offered to students who wish to prepare to enter the automobile mechanics trade. This curriculum offers practical experience in repairing and maintaining automobiles and light trucks by diagnosing

defects, disassembling units, making adjustments or replacement, and reassembling parts. The completion of this curriculum should qualify the student for employment on the journeyman level.

**First Year
(First Semester)**

| Course | T | L | C |
|---|----------|----------|-----------|
| 113 Theory of Internal Combustion Engines | 2 | 3 | 3 |
| 102 Shop Practice | 0 | 6 | 2 |
| 112 Engineering Drawing | 1 | 3 | 2 |
| 112 Acetylene Welding | 0 | 6 | 2 |
| 113 Garage Practice | 0 | 9 | 3 |
| 102 Shop English | 2 | 0 | 2 |
| 213 American History | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 17 |

(Second Semester)

| Course | T | L | C |
|---------------------------------|----------|----------|-----------|
| 153 Chassis Repair | 1 | 6 | 3 |
| 212 Technical Drawing | 1 | 3 | 2 |
| 103 Shop Math | 3 | 0 | 3 |
| 183 Fundamentals of Electricity | 2 | 3 | 3 |
| 123 Garage Practice | 0 | 9 | 3 |
| 113 Government | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 17 |

Summer Session

| Course | T | L | C |
|--|---|----|---|
| 108 Garage Practice or On-the-job-Training | 0 | 24 | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 203 Automotive Electrical Systems | 2 | 3 | 3 |
| 172 Advanced Acetylene Welding | 0 | 6 | 2 |
| 213 Garage Practice | 0 | 9 | 3 |
| 101 Job Orientation | 1 | 0 | 1 |
| 122 Machine Shop | 1 | 3 | 2 |
| 223 Fuel and Oil Systems | 2 | 3 | 3 |
| 202 Employment Relations | 1 | 0 | 2 |
| 101 Shop Safety | <u>1</u> | <u>0</u> | <u>1</u> |
| Total: | | | 17 |

(Second Semester)

| | | | |
|---------------------------------|----|----|----------|
| 203 General Business | 3 | 0 | 3 |
| 233 Garage Practice | 0 | 9 | 3 |
| 201 Job Orientation | 1 | 0 | 1 |
| 243 Fender and Body Repair | 1 | 6 | 3 |
| 212 Electric Arc Welding | 0 | 6 | 3 |
| 203 Industrial Labor Management | | | 3 |
| 201 First Aid | -- | -- | <u>1</u> |
| Total | | | 17 |

Refrigeration and Air Conditioning Mechanics. The curriculum in refrigeration and air conditioning mechanics is offered to prepare service mechanics in the field of refrigeration and air conditioning. It gives practical experience in installing and servicing domestic and commercial refrigeration equipment. The air conditioning included in this curriculum is restricted to summer air conditioning which is related to commercial refrigeration. The universal acceptance of both domestic and commercial refrigeration equipment as necessities creates a need for properly trained refrigeration service mechanics.

First Year
(First Semester)

| Course | T | L | C |
|---------------------------------|---|---|-----------|
| 243 Theory of Refrigeration | 3 | 0 | 3 |
| 252 Acetylene Welding | 0 | 6 | 2 |
| 162 Fundamentals of Electricity | 2 | 0 | 2 |
| 102 General Metal Work | 0 | 6 | 2 |
| 112 Engineering Drawing | 0 | 6 | 2 |
| 102 Shop English or English 113 | 2 | 0 | 2 |
| 113 Government | 3 | 0 | 3 |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|----------------------------|---|---|-----------|
| 253 Domestic Refrigeration | 1 | 6 | 3 |
| 172 House Wiring | 1 | 3 | 2 |
| 272 Advanced Acetylene | 0 | 6 | 2 |
| 212 Technical Drawing | 0 | 6 | 2 |
| 132 Bench Woodwork | 0 | 6 | 2 |
| 103 Shop Mathematics | 3 | 0 | 3 |
| 123 English | 3 | 0 | 3 |
| Total | | | 17 |

Summer Session

| Course | T | L | C |
|---------------------|---|----|---|
| On-the-job Training | 0 | 24 | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|--------------------------------|---|---|-----------|
| 213 Commercial Refrigeration | 1 | 6 | 3 |
| 202 Sheet Metal | 0 | 6 | 2 |
| 122 Machine Shop | 0 | 6 | 2 |
| 212 Machine Drawing | 0 | 6 | 2 |
| 162 Electric Arc Welding | 0 | 6 | 2 |
| 282 Theory of Air Conditioning | 2 | 0 | 2 |
| 213 American History | 3 | 0 | 3 |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|------------------------------|----------|----------|----------|
| 293 Air Conditioning | 1 | 6 | 3 |
| 222 Advanced Sheet Metal | 0 | 6 | 2 |
| 203 General Business | 3 | 0 | 3 |
| 203 Speech | 3 | 0 | 3 |
| 215 Commercial Refrigeration | <u>2</u> | <u>6</u> | <u>5</u> |
| Total | | | 16 |

Welding Curriculum. The welding curriculum is designed to prepare a student to do repair shop welding using either acetylene or electric arc equipment. This practical course also includes courses related to welding that will give a mechanic a better understanding of the welding trade. Special emphasis is placed on welding jobs similar to ones encountered in the industries located in northeast Oklahoma.

First Year
(First Semester)

| Course | T | L | C |
|-------------------------|----------|----------|----------|
| 102 Shop Practice | 0 | 6 | 2 |
| 142 Blue Print Reading | 2 | 0 | 2 |
| 112 Acetylene Welding | 0 | 6 | 2 |
| 112 Forge Practice | 0 | 6 | 2 |
| 112 Engineering Drawing | 0 | 6 | 2 |
| 103 Shop Mathematics | 3 | 0 | 3 |
| 113 Government | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|---------------------------------|---|---|---|
| 112 Advanced Acetylene Welding | 0 | 6 | 2 |
| 122 Machine Shop | 0 | 6 | 2 |
| 102 Shop English or English 113 | 2 | 0 | 2 |

(Second Semester)
Continued

| Course | T | L | C |
|---------------------------------|----------|----------|----------|
| 212 Technical Drawing | 0 | 6 | 2 |
| 101 Shop Safety | 1 | 0 | 1 |
| 115 General Chemistry | 3 | 4 | 5 |
| 112 Fundamentals of Electricity | <u>2</u> | <u>0</u> | <u>2</u> |
| Total | | | 16 |

Summer Session

| Course | T | L | C |
|-------------------------|---|----|---|
| 108 Repair Shop Welding | 0 | 24 | 8 |
| or | | | |
| On-the-job Training | 0 | 24 | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|---------------------------|----------|----------|----------|
| 212 Electric Arc Welding | 0 | 6 | 2 |
| 202 Sheet Metal | 0 | 6 | 2 |
| 212 Machine Drawing | 0 | 6 | 2 |
| 213 American History | 3 | 0 | 3 |
| 132 Advanced Machine Shop | 0 | 6 | 2 |
| 205 Job Shop Welding | <u>2</u> | <u>9</u> | <u>5</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 222 Advanced Electric Arc Welding | 0 | 6 | 2 |
| 202 Employment Relations | 2 | 0 | 2 |
| 201 First Aid | 1 | 0 | 1 |
| 225 Repair Shop Welding | 2 | 9 | 5 |
| 203 Industrial Labor Management | 3 | 0 | 3 |
| 203 General Business | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 16 |

Radio Service Mechanic Curriculum. The wide use of the radio as a home appliance has created a need for capable radio mechanics to service this equipment. The radio service mechanics curriculum is designed to prepare students to enter this business in the service trade upon completion of the two year curriculum.

**First Year
(First Semester)**

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 102 Shop English or English 113 | 2 | 0 | 2 |
| 112 Fundamentals of Electricity | 2 | 0 | 2 |
| 112 Radio Theory | 2 | 0 | 2 |
| 113 Radio Construction and Repair | 1 | 6 | 3 |
| 102 Shop Practice | 0 | 6 | 2 |
| 112 Acetylene Welding | 0 | 6 | 2 |
| 113 Government | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 122 Advanced Radio Theory | 2 | 0 | 2 |
| 112 Engineering Drawing | 0 | 6 | 2 |
| 102 Household Appliances | 2 | 0 | 2 |
| 215 Physics, General | 3 | 4 | 5 |
| 115 Radio Construction and Repair | <u>2</u> | <u>9</u> | <u>5</u> |
| Total | | | 16 |

Summer Session

| Course | T | L | C |
|-----------------------------------|---|-----|---|
| 108 Radio Construction and Repair | 0 | 2 4 | 8 |
| or | | | |
| On-the-job Training | 0 | 2 4 | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 225 Physics | 3 | 4 | 5 |
| 103 Shop Mathematics | 3 | 0 | 1 |
| 202 Employment Relations | 2 | 0 | 2 |
| 213 Radio Construction and Repair | 1 | 6 | 3 |
| 113 American History | 3 | 0 | 3 |
| 212 Technical Drawing | <u>0</u> | <u>6</u> | <u>2</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|-----------------------------------|----------|----------|----------|
| 215 Radio Construction and Repair | 2 | 9 | 5 |
| 203 General Business | 3 | 0 | 3 |
| 101 Shop Safety | 1 | 0 | 1 |
| 203 Fundamentals of Speech | 3 | 0 | 3 |
| 222 Illumination and Wiring | 2 | 0 | 2 |
| 203 Industrial Labor Management | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 17 |

Electrical Trades Curriculum. The increasing demand for electrical energy both in the home and in industry creates a need for more skilled mechanics in this field. The electrical trade curriculum is prepared for those who wish to work in the installation and maintenance of electrical equipment. This curriculum will provide the student with technical information and practical experience in light and power wiring and the installation and maintenance of electrical equipment.

First Year
(First Semester)

| Course | T | L | C |
|---------------------------------|---|---|---|
| 102 Shop English or English 113 | 2 | 0 | 2 |
| 102 Shop Practice | 0 | 6 | 2 |

First Year
(First Semester)
Continued

| Course | T | L | C |
|---------------------------------|----------|----------|----------|
| 112 Engineering Drawing | 0 | 6 | 2 |
| 103 Shop Mathematics | 3 | 0 | 3 |
| 112 Fundamentals of Electricity | 2 | 0 | 2 |
| 132 Bench Woodwork | 0 | 6 | 2 |
| 113 Government | <u>3</u> | <u>0</u> | <u>3</u> |
| Total | | | 16 |

(Second Semester)

| Course | T | L | C |
|--------------------------|----------|----------|----------|
| 143 Mathematics, Algebra | 3 | 0 | 3 |
| 152 Acetylene Welding | 0 | 6 | 2 |
| 122 Machine Shop | 0 | 6 | 2 |
| 215 Physics, General | 3 | 4 | 5 |
| 102 Household Appliances | 2 | 0 | 2 |
| 222 Illumination Wiring | <u>2</u> | <u>0</u> | <u>2</u> |
| Total | | | 16 |

Summer Session

| Course | T | L | C |
|--|---|----|---|
| 108 Electrical Maintenance and Construction | 0 | 24 | 8 |
| or | | | |
| On-the-job Training | 0 | 24 | 8 |

Second Year
(First Semester)

| Course | T | L | C |
|--|----------|----------|----------|
| 225 Physics (Electricity, sound, light) | 3 | 4 | 5 |
| 173 Mathematics, Algebra | 3 | 0 | 3 |
| 203 Light and Power Wiring | 1 | 6 | 3 |
| 202 Employment Relations | 2 | 0 | 2 |
| 213 American History | 3 | 0 | 3 |
| 101 Shop Safety | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | | | 17 |

(Second Semester)

| Course | T | L | C |
|--------------------------------------|----------|----------|----------|
| 223 Electric Motors | 2 | 3 | 3 |
| 212 House Wiring | 0 | 6 | 2 |
| 203 Industrial Labor Management | 3 | 0 | 3 |
| 233 Maintenance of Electrical Equip. | 2 | 3 | 3 |
| 201 First Aid | 1 | 0 | 1 |
| 212 Technical Drawing | 0 | 6 | 2 |
| 212 Electric Arc Welding | <u>0</u> | <u>6</u> | <u>2</u> |
| Total | | | 16 |

Adult Education. Night classes in industrial education should be offered for the working individual who is not able to attend day school. Two instructors should be available each semester for instructional duty in the evenings. A variety of subjects should be offered for the students to select courses from. Any course offered in the day school will be offered to night students provided there is a sufficient number of students interested to justify the time of the instructor and the use of the shop facilities. Enrollment in the adult education shop classes will start the second week of each regular school semester and will terminate one week before the close of the regular semester. Only regular enrollment fees will be charged for the night school.

The industrial education department of the Northeastern Oklahoma A. & M. College is a service institution. The curriculums proposed are designed to meet the immediate needs of the students enrolling in the college. The curriculum offerings of the industrial education department will be revised at short intervals to maintain a satisfactory

relationship to the fast growing industrial society in which the department is located. When a curriculum is no longer in demand by the community it will be discarded and the efforts of the instructional staff applied to evolve a more worthwhile program.

D. SUMMARY

The twenty two skilled trades found to be in demand in Chapter VI were considered in formulating the eight curriculums recommended for industrial education department of the Northeastern Oklahoma A. & M. College. These curriculums were designed to meet the needs of the community in which the college is located and the long and short term needs of the students enrolling in the college. These needs were determined by personal interviews made by the guidance center.

The curriculums recommended in this chapter are to be taught in nine unit shops housed in four buildings located on the campus of the college. The instructional staff consists of four instructors, all possessing degrees from four year colleges with majors in the fields in which they teach. Two of the instructors have sufficient trade experience to qualify for trade teachers.

The changes in the needs of the community will effect changes in the curriculum offerings of this department. Evening classes will be offered for adults who are unable to attend day school. The courses to be taught in the night school will be determined by the students.

In Chapter VIII a detailed summarization of the study will be given and specific recommendations will be offered.

CHAPTER VIII

SUMMARIZATIONS AND RECOMMENDATIONS

The junior college movement is a heterogeneous one. It has many aspects in different sections of the country and in varied types of institutions. It is an experimental movement. The field abounds in problems of many types. Perhaps the greatest of these is the curriculum. Shall greater emphasis be placed upon terminal and extension courses? If so, what shall be their nature? These questions can be answered only in terms of the local community where the college is located.

The junior college movement can become a truly significant contribution to American education if the limitations and boundaries of its own field are recognized, its functions deliberately delimited and any ambition of making of it a four year college or university repressed. Those who administer junior college education should find supreme satisfaction doing a more thorough service in the freshman and sophomore years than has been done before.

A. SUMMARIZATION

A study of the junior college movement and the underlying philosophy of this movement is a complex problem. The many functions of the junior college makes it a unique

institution. The following statements are considered by the author as the most interesting elements of this study:

1. The junior college movement is a relatively recent addition to the American system of education. It may be considered a product of the twentieth century.

2. The first junior colleges were created with the purpose of preparing students for entrance into universities.

3. The recognition of functions other than the university preparatory function has contributed to the popularity of the junior college.

4. The interpretation of the junior college in terms of the local needs of a community has led to a great variety of types of junior college programs.

5. The junior college curriculums have shown a change from the original college preparatory curriculums offered in the earlier years of junior college history to an increase in the terminal phase.

6. Serving in the same area as the junior college yet functionally different are the technical institutes. The origin of these schools dates back to 1785.

7. The technical institute has one function, that of preparing for employment between the skilled trades and the professional level of engineering.

8. The increasing demand for more technically trained employees justifies the creation of many more technical institutes.

9. The junior colleges of Oklahoma can be classified under four types, namely, the state junior college, the municipal junior college, the independent junior college and schools of specialized training.

10. The legal status given the junior colleges of Oklahoma by the state legislature definitely affords an opportunity for these institutions to offer a broad and varied program of education.

11. The programs of education offered by the junior colleges of Oklahoma indicate that the individual schools are failing to offer programs as broad as they should.

12. Limiting factors have prevented the junior colleges of Oklahoma from offering as much terminal education as is needed.

13. The enrollment in the junior colleges of Oklahoma is small as compared to that in other states. This is understandable considering the great number of municipal junior colleges located in cities with populations under ten thousands.

14. The junior colleges of Oklahoma are doing a credible service in preparing students for entrance into the junior year of the university and in providing general education for those who desire it.

15. More terminal curriculums and better guidance programs are needed for the junior colleges of Oklahoma.

16. All of the state junior colleges offer curriculums in industrial education. These curriculums are influenced too much by the university preparatory function.

17. Only a few of the municipal and independent junior colleges offer any courses in industrial education.

18. More industrial education curriculums of terminal nature are needed in Oklahoma.

19. A better understanding of the needs of the community and the short and long term needs of the students in the junior college is essential in planning curriculums in industrial education for the junior college.

20. The best criterion for selecting the types of curriculums to be offered in the industrial education department is the definite assurance of employment of the student in the trade after he is trained.

21. In determining what should be offered in the industrial education department of the Northeastern Oklahoma A. & M. College a study was made to determine the employment possibilities of different skilled and semi-skilled occupations. This study indicated the need for employees in twenty-two trades.

22. The twenty-two skilled trades found in demand in northeast Oklahoma justifies the offering of eight industrial education curriculums by the industrial education department.

23. The eight curriculums recommended for the industrial education department of the Northeastern Oklahoma A. & M. College are:

1. Industrial Arts Curriculum
2. Maintenance Mechanics Curriculum
3. Automobile Mechanics Curriculum
4. Refrigeration and Air Conditioning Curriculum
5. General Woodwork Curriculum
6. Welding Curriculum
7. Radio Construction and Repair Curriculum
8. Electric Trades Curriculum

24. The three factors limiting the curriculum offerings of the industrial education department are (1) insufficient shop space, (2) a shortage of tools and equipment and (3) a shortage of instructional personnel.

25. A new shop building, sufficient in size to house all the unit shops of the industrial education department, has been requested for the Northeastern Oklahoma A. & M. College.

B. RECOMMENDATIONS

The following recommendations are not to be interpreted as being critical of the present administration of the junior colleges of Oklahoma. The specific recommendations are offered as a result of personal opinion conceived by the writer from a point of view which can be interpreted as a personal interest in industrial education. The majority of the recommendations are given in respect to the relationship which they bear to the Northeastern Oklahoma A. & M. College and particularly to the industrial education department of that school, with the purpose of making this institution of greater service to the community and the students whom it serves.

Problems for Further Study. Several problems for further study in regard to the recommended program of industrial education for the Northeastern Oklahoma A. & M. College have confronted the writer while carrying out the research work for this thesis. These problems are listed as suggestions for further study.

1. Since the emphasis was placed on the vocational objectives in making this study additional research on the subject of this theses, perhaps in the field of general education, is needed in order that a more complete program for industrial education might be recommended.

2. A study of the avocational interests of the students of Northeastern Oklahoma A. & M. College with the object of recommending a program of hobbies in the industrial education department would be a worth-while project.

3. The planning of a new shop building sufficient to adequately house all the unit shops of the industrial education department and the selection and arrangement of the equipment needed in these shops would be an interesting and valuable study.

4. A survey of the community near the Northeastern Oklahoma A. & M. College to determine what adult education curriculums are needed and the organization of an evening program in industrial education that would provide the same opportunities to adults as is provided the regular students would be a worth-while project.

Specific Recommendations. The following list of specific recommendations are offered for the industrial education department of Northeastern Oklahoma A. & M.

College:

1. A greater emphasis should be placed on the terminal functions of the college.

2. The guidance center of the college should be expanded and more personnel employed in order to make this department more available to all students.

3. It is recommended that the following curriculums be offered:

- (1) Industrial Arts Curriculum
- (2) General Woodwork Curriculum
- (3) Maintenance Mechanics Curriculum
- (4) Automobile Mechanics Curriculum
- (5) Refrigeration and Air Conditioning Curriculum
- (6) Welding Curriculum
- (7) Radio Construction and Repair Curriculum
- (8) Electric Trades Curriculum

4. The proposed shop building to house all the industrial education department should be built as soon as possible to relieve the crowded conditions now existing in the unit shops.

5. Equipment should be added to the unit shops in order that more practical experience may be gained by the students.

6. Additional instructional personnel should be employed to relieve the present faculty of some duties in order to make their services available for the evening classes.

7. The program of industrial education should be evaluated at intervals and revisions should be made so that the curriculums may meet the changing needs of industry in the area which the school serves.

8. The resources of the community should be utilized more as training aids in industrial education.

9. The salary scale of the industrial education department should be adjusted upward in order to attract teachers with industrial experience.

10. Courses should be offered by the industrial education department that would appeal to the avocational interests of the students and would provide hobbies that would make worthy use of leisure time.

The realization of these recommendations in the opinion of the writer of this thesis would provide a program of industrial education that would meet the needs of the community and the students of Northeastern Oklahoma A. & M. College.

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