A STUDY OF THE INDUSTRIAL ARTS STUDENT-FRACHER
EDUCATION PROGRAMS IN FOUR SELECTED OKLAHOMA COLLEGES

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A STUDY OF THE INDUSTRIAL ARTS STUDENT-TEACHER EDUCATION PROGRAMS IN FOUR SELECTED OKLAHOMA COLLEGES

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Bachelor of Science

East Central State College

Ada, Oklahoma

Substitted to the Faculty of the
School of Industrial Arts Education and Engineering Shopwork
Oklahowa Agricultural and Mechanical College
In Partial Pulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE

1954

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L. N. R.

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CHAPTER I

INTRODUCTION

There is a definite need for a careful study and enalysis of the programs of student teaching which are offered by institutions of higher learning. Those who employ beginning teachers and, indeed, many beginning teachers themselves, complain that student-teaching experience is too limited to permit prospective teachers to gain an adequate comprehension of the responsibilities of teaching.

Critics of the existing progress make mention of the following weaknesses: the beginning teacher is not prepared to teach in schools which are developing general education, or core classes; he is unable to carry his share of the school-guidance program; he fails to utilize the methods of teaching which have proved best for secondary schools, and he knows little about teacher-pupil planning. the use of visual aids, or modern techniques and instruments of evaluation; he has lack of professional loyalty toward teaching, evidenced by hesitancy in becoming associated with professional organizations, and by little interest in curriculum development or in-service training programs; and the beginning teacher does not take part in school and community activities and thereby fails to develop general effectiveness as a member of the school faculty. (A7. page 67)

Origin of the Problem. Nethods of teaching are an intrinsic part of the organized educative process from the kindergarten through graduate work. Nuch of the history of education is the story of efforts to improve teaching methods. As the concept of education itself changed, so teaching methods changed to conform to these new concepts, and student-teacher education programs were adjusted in keeping with the teaching methods.

Educators have always been concerned with the most effective teaching methods to achieve the generally accepted educational goals and the next concern of no less importance, the problem of teaches instruction in the use of these methods. Teaches colleges particularly recognize the close relationship between teacher education and the educational results obtained in the public schools. Inhoratory schools have constantly worked for the improvement of student-teacher education methods.

As a teacher and supervisor of industrial arts in the public schools of Oklahosa for approximately twenty years, the uniter has witnessed changes in the ideas of the purposes of the industrial arts program, the teaching notheds advocated to achieve these purposes, and programs of teacher training. Today, there appears to be a more common agreement as to the place the industrial arts program should have in the educational program than either on the notheds of teaching in this field, or the program of student-teacher education. That industrial arts instruction abould be a part of the general education program is now generally accepted. Buy what about the most effective student-teacher education program be organized and administered to prepare teachers in the use of the most desirable methods?

In general teachers will teach the way they have been taught to teach. If this were not true, then the roney spent in teacher education institutions is a poor investment. Of course it is recognized that with teaching experience methods of instruction will be modified in the light of these experiences. But the effectiveness of the teaching in the industrial erts program will be greatly conditioned by the mature of the

student-teacher education program completed by the industrial arts teacher. Recognition of this condition, coupled with a deep interest in the improvement of student-teacher education programs in industrial arts, caused the writer to undertake a study of the programs in industrial arts in four selected Oklahoma colleges.

Reed for the Study. As the teacher is, so is the school. As the teacher is educated, so are his teaching skills, understandings, and competencies improved. The student-teacher education programs of the colleges and universities play a major role in determining the nature and extent of educational opportunities offered to boys and girls in the public schools. Weak, inadequate programs mean limited and inefficient teaching. Student-teacher education programs based on a sound philosophy of the nature of the learner, the principles of the learning process, and an understanding of the major goals of education, will result in capable, resourceful, and effective teachers.

Industrial arts is a relatively new comer to the organized school curriculum in spite of the fact that some form of craftsmanship was a part of the training of youth since the beginning of human society. But not until the last twenty-five years has the purpose of industrial arts been accepted as an essential part of general education. There is still the unsolved problem of how best to educate teachers for work in this part of the curriculum. Only constant study and experimentation can give the type of student-teacher education programs in industrial arts comparable in effectiveness with training programs in the other and older areas of the curriculum.

What are come of the characteristics of student-teacher education programs in the influstrial arts in Whichorn? To what extent one there programs uniform in the different colleges? Is there a common philosophy in rederance to influstrial arts and student-teacher education in the different teachers colleges? How can student-teacher education programs in industrial arts be improved? Assurers to these questions recessitate continuous study of student-teacher education programs in this field if the educational apportunities in this area of the curriculum been passe with developments in other parts of the curriculum.

Idealizations of the Problem. To restrict the study of stadentteacher education programs for the industrial arts to the practices
followed in four Udehene colleges will not reconstantly indicate general
practices in other parts of the nation. It should, however, he indicative of trends and general practices in Odehone and that is the present
interest of the writer. By selecting for study the two largest educational institutions of the state, the University of Odehone and the
Odehone Agricultural and Declarated College, and two of the typical
state teachers' colleges, East Central State College and Fortheestern
State College, the findings chould be fairly representative of the philesophies and practices parteining to the education of inhastrial arts
teachers in Odehone.

Heliois of Research. The method of rescurch used was predominantly the normative curvey type of rescurch. The nature of the problem and its limited scope made it possible to obtain the data relevant to the problem by interviews, correspondence, use of catalogues and other pullications of the institutions studied, and by questions area. The writer's

extended experience as an industrial arts teacher in Oklahoma gave him close contact with others working in this field which was a great aid in securing the necessary information. The data collected were organized in table form, analyzed, interpreted, and a report of the findings presented in paragraph form.

<u>Definition of Terms</u>. Every specialized field of study has its technical vocabulary which needs to be defined before the literature can be read intelligently. Because of this, certain terms poculiar to the field of industrial arts and to this study have been defined.

Industrial Arts. Industrial arts is a group of school subjects that contribute to the attainment of the goal of general education by furnishing guided experience in the use of tools, materials, and machinery, and insight into those phases of industry that have become an important part of our social culture. (A9, page 1)

Industrial arts is the name given to all forms of shopwork 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 twentieth century and is almost universally used today to refer to non-vocational shopwork and industrial courses in the public schools. (A5, page 1)

<u>Practice Teaching</u>. The term "practice teaching" will be construed to mean the activities and/or observations of the student teacher which takes place under the supervision of a teacher or supervisor officially assigned to this duty.

Practice Teacher. The term "practice teacher" is used to denote any college student who, under supervision, teaches and/or observes class activities. The terms "student teacher" and "practice teacher" are used synonymously.

Supervisor. The supervisor is the instructor in charge of the laboratory or cooperating school classes who observes, supervises, evaluates, and makes recommendations for improvement of the process of teaching.

<u>Iaboratory School</u>. The laboratory school is the college controlled school in which the practice teaching is done. It is usually located on or near the college campus, and is the laboratory for the education department of the college. (A6, page 6)

Cooperating School. The cooperating school is a regular public school in which practice teaching is done under some plan worked out by the college or laboratory school supervisor and the public school officials. (A6, page 6)

Flan of Procedure. The order of presenting the report of this study was to give the setting of the problem, its statement, definition, limitations, and importance in the introductory chapter. The second chapter was devoted to the philosophical aspects of the problem with a statement of the writer's philosophy relating to the industrial arts and the student-teacher education program in the field. In the third chapter a report was made of the study of the student-teacher education program in the four selected Oklahoma colleges. Data were presented,

analyzed, and generalizations made. The concluding chapter was devoted to a summary of the conclusions and recommendations supported by the study.

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PETROPORTION CONSTRUMENTS RELATED TO THE STATE

To understand an institution, it is necessary to how something of its history. This principle applies to the institution of education. Educators have recognised this fact, and as a result, courses in the history of education are found in the curriculum of practically all institutions for the education of tenchers.

The industrial arts is an accepted part of the modern school carriculum today, but to understand its place in the education progress and
to appreciate the values which it has to contribute to present day youth,
one needs to know scrething of the historical background of this area of
the carriculum.

Early Mistory. Excitoraft work constituted most of the culture of primitive man. His very survival depended upon the effectiveness of his hardicraft. Move everything elec, primitive man sought security, and the excellence of the products of his hardiwork provided this security. The right have been an instrument of variance, or some took to use for providing better food, alothing, and chelter. Mistory tells up that when one masher of a tribe was able to produce a better product for use of the group than any other number, then the others looked to him to furnish this product and hartered for it. The skill developed in this hardicraft work was passed on to the sons and often to other members of the group, and here in this practice was the beginning of industrial arts

education. Its purpose was primarily vocational. Of course primitive man was not aware that these early handicraft skills were the beginning of trades and crafts, and least of all was he aware of any handicraft philosophy.

<u>Current Philosophical Beliefs</u>. Basic philosophy of industrial arts, as stated by Robert A. Hardin in an article written for the <u>Industrial</u>

<u>Arts and Vocational Magnains</u>, is stated as follows:

The basic philosophy of industrial arts is the same now as it has always been, the welfare of the common man. Industrial arts is not a new area in education; it is the oldest form of education known to man. It antidates academic instruction by many centuries, but did not become a part of the formal education program until much later because education was not for the masses, but for the sons of princes, lords, and wealthy landowners. (A4, page 179)

A number of different philosophies influenced industrial arts before the nineteenth century. John Locke saw in handwork a means of diversion and recreation. Rousseau, the naturalist, contributed to the philosophy of industrial arts. He placed much importance on training for real living. He would have every boy learn a trade that he might pursue it, and that he might become more sympathetic toward others in the trade.

Of all educational writers up to the first quarter of the eighteenth century, Pestalozzi and Fellenberg made the greatest contributions to industrial arts. Pestalozzi felt that academic work and handwork should go hand in hand. He made some progress in using objects and manual labor as a means of teaching the academic subjects. Fellenberg established manual labor and farm schools which dominated the arts and crafts training until about 1870. (AA, page 180)

The philosophy of disciplinarianism played its part in the latter
part of the nineteenth and early twentieth century to shape the content
and methods of industrial arts, as it did the academic curriculum. Before
the twentieth century was well underway, educators in general were beginning

to see in industrial arts the same values the schools were pursuing in the total education process. The underpinning values were the same for industrial arts as those sought in general education and industrial arts came to be recognized as an essential part of the general education program.

There were certain studies in the area of curriculum development that encouraged thinking of industrial arts as a part of the general education program, and probably no event did more in this respect than the famous committee for the Reorganization of the High School Curriculum, appointed by the National Education Association, 1918, when it proposed the Seven Cardinal Principles of Education as major goals of education. It was realized that the industrial arts contributed not only to vocational efficiency, but that it contributed to the realization of each of the seven cardinal objectives.

More recently the Education Policies Commission formulated four basic guides for education in our democratic society: self-realization, human relationships, economic efficiency, and civic responsibility. Here again it became obvious that the industrial arts contributed to each of these areas of individual and social development. Today, few educators question the need of including industrial arts in the general education program. The problems more often are inadequate finance, limited plant facilities, poor equipment, shortage of well-trained teachers, etc.

Implementation of the Philosophy of Industrial Arts as a Pert of
the General Education Program. Merely to accept industrial arts as a
part of the general education program will give little help to the industrial arts teacher. This philosophy must be translated into learning

activities and must be related to specific achievements in the way of changed behavior patterns. Gordon O. Wilber has presented a very complete list of the behavior changes that may be expected in youth in industrial arts classes with certain objectives in mind. They are as follows:

Objective: To explore industry and American industrial civilization in terms of its organization, raw materials, processes and operation, products, and occupations.

Expected Behavior Changes from Students:

- 1. They will be familiar with the organization of industry and related the personnel organization of the industrial arts shop to similar systems in industry. Their cooperation in the personnel system will increase.
- They will read more intelligently about industry and industrial products. The choice of their reading will be affected.
- They will recognize industrial methods and will attempt to apply them in the school shop.
- 4. They will visit industries whenever possible to learn about methods, products, etc.
- 5. They will recognize various raw materials and talk about their sources, transportation, and processing with the class.
- They will read and talk about the various occupations within an industry. A tentative choice of an occupation may be made.
- They will discuss occupations with the teacher, friends, and parents.
- They will choose materials wisely because they are acquainted with their uses by industry.
- 9. They will read about and interpret the problems of management and labor more intelligently.
- 10. They will seek information about new developments in industry.

Objective: To develop recreational and avocational activities.

Expected Behavior Changes from Students:

- They will read such magazines as Popular Mechanics, Home Craftsman, and Popular Science.
- 2. They will ask advice on how to carry on constructive activities out of school.
- They will become interested in, and will engage in, one or more constructional hobbies.
- 4. They will spend spare time in the shop either in school or at home.
- 5. They will ask questions and talk about their hobbies.
- They will consult catalogs for information about their hobbies.
- 7. They will contribute to class discussions with information gained from reading along lines of their interest.
- 8. They will take initiative in visiting industries along the lines of their interests.
- 9. They will make the acquaintence of, and form friendships with, others having similar interests.
- 10. They will develop home workshops.
- 11. They will suggest and work on projects related to their interests.

Objective: To increase an appreciation for good craftsmanship and design, both in the products of modern industry and artifacts from the material cultures of the past.

Expected Behavior Changes from Students:

- They will recognize goods and apply such knowledge in the construction of projects.
- 2. They will appreciate good design in artifacts and will show such appreciation in speech and actions.
- 3. They will recognize and appreciate period pieces.
- 4. They will recognize the place of "streamlining" in design and will apply it correctly in developing projects.

- They will re-decien projects to improve their appearance and utility.
- 6. They will colout or develop projects which are multiplied to the retardal being used.
- 7. They will recognize and avoid your design and "over decoration".

<u>Thiertime</u>: To increase constant increases to a point where students can solvet, buy, use, and reintein the products of industry intelligently.

Expected Delivertor Changes from Stadenders

- 1. They will exculse articles especially and judge their with below laying.
- 2. They will look for constructional features in judging the worth of an article.
- 3. They will become about nuterials and will apply their boundaries in radius purchases.
- 4. They will become acquainted with trade momes and will look for proven branks when buying.
- 5. They will maintain and use manufactured articles in such a vey se to prolong their life and usefulness.
- 6. They will recognize quality and will buy accordingly.
- 7. They will imy on the basic of their woods, rather than entirely on the basic of price.

Chiective: To provide information about, and in so far as possible, experiences in, the basic processes of many industries, in order that students may be more competent to choose a future vection.

Apported Releasion Charges from Studente:

- l. They will reed and talk about various occupations.
- 2. They will rate textetive cholers of westiess.
- 3. They will decide that they are not littled for, or are not interested in, certain vections.

- 4. They will know and be able to explain the entrance requirements, training, working conditions, and wages of many occupations.
- 5. They will talk with representatives of many occupations concerning the work in which they are capaged.
- 6. They will visit industries and observe the various worknen under normal variety conditions.
- 7. They will watch with interest notion pictures chaming workers at various occupations.
- 2. They will choose elective courses which provide additional information about occupations.

Objective: To encourage creative expressions in terms of Industrial raterials.

Espected Deluvior Changes from Studentes

- 1. They will design and mike now projects.
- 2. They will think through the correct procedure for making a project and will then follow their plan.
- 3. They will experiment with new ways of solving constructive problems and will take improvements on the basis of their experiments.
- 4. They will develop skill and facility in the use of many materials.
- 5. They will appreciate or criticize comparatively design in the work of others.
- 6. They will choose meterials which are best suited for a given project or use.
- 7. They will take likes from different sources and oreste new decigns.
- 6. They will increasingly etterpt to solve their can problems.

<u>Objective</u>: To develop desirable social relationships, such as cooperation, tolerance, lesderable and followership, and test.

Expected Behavior Changes from Students:

- 1. They will develop a group spirit and loyalty.
- They will cooperate with others in promoting a group program.
- 3. They will assume and discharge leadership responsibilities.
- 4. They will organize or participate in club activities.
- They will accept leadership responsibilities in club organizations.
- 6. They will give help and advice willingly.
- 7. They will accept assignments given them by leaders in the personnel organization and recognize the leadership of others.
- They will work willingly with individuals who may be a different race, creed, or color.

Objective: To develop a certain amount of skill in a number of basic industrial processes.

Expected Behavior Changes from Students:

- They will perform tool processes with an increasing degree of accuracy.
- The quality of workmenship in their projects will be improved.
- 3. They will develop pride in their craftsmanship.
- 4. Their self-assurance will increase and will be indicated by a willingness to attempt more difficult projects.
- They will practice difficult operations in order to perfect the skills. (AS, pages 47-54)

The foregoing statement of objectives for the industrial arts program, with the analyses of these objectives in terms of skills, compotencies, knowledges, and attitudes, appears to express well the philosophy of industrial arts as an essential part of general education. The writer would propose that these objectives with their concomitant learning products will need to be interpreted and applied in terms of community

needs, and student interests, aptitudes, and needs. Great emphasis may need to be given some of these objectives in one community, whereas, in another the emphasis may need to be placed on other objectives. Also, a careful study of individual students will need to be made in order that the program be adjusted to meet individual needs. With these explanations of Wilber's statement of objectives, the writer accepts it as a clarification of the general education concept which may be applied to give meening and purpose to the industrial arts program.

But the real problem of this report is the education of industrial arts teachers. It might be well at this point to give a brief history of student-teacher education as it has developed over many years.

Early Normal School in Europe. Johann Jakob Wehrli (1790-1855) was the originator, organizer, and developer of the farm and trade school in Fellenberg's institution at Hoftyl. After twenty-three years of service at Hoftyl, Wehrli accepted the management of a normal school at Ercuitz-lingen on the shore of Lake Constance in Switzerland in 1833. Although the student-teacher education program did not necessarily give emphasis to industrial arts, it was a beginning of teacher education.

Throughout Switzerland Wehrli's normal school was regarded as a model, and in a greater or less degree the other normal schools of the country edopted his viewpoint on the training of teachers. Wehrli's beliefs were stated as follows:

Wehrli believed that successful teachers of the children of the poor must be friends and associates of the poor, yet well educated. They must be humble and willing and able to labor as peasants labor. He had seen the ill effects of sending young men to colleges where they lived in luxury, and then allowing them to teach in peasant schools. They were misfits; they often became dissatified with their surroundings, and gave up teaching to become clerks. To avoid this, and to incure the confidence and co-operation of the peasants, he would make the student's life "as aimple, and even rure humble and laboriour than the teacher's village life", so that when he became a teacher he would enjoy greater case then during his years of properation. (62, pages 166-67)

Beginning of Student-Section Education in England. In 1864 et
South Mencington in England, an education institution was established
especially for the training of teachers in technical subjects. From
1864 to 1860 the city and guilds of London Institute became the center
for named training teachers. In 1890 government grants were smallable
for named training. As a result of the grants, nove schools were established and these was a demand for more teachers. There were two
sources of supply for such teachers: (a) Board school teachers of other
conjects who had taken courses in named training, and (b) the better
considers artisens in the chilled trades who passed executations for
teachers.

The ectual work for training teachers for the larger cities was done by local school beards (after the education set of 1902, by the County Councils) or by technical schools, or by both in co-operation. In london the teachers of woodworking and metalworking came to be supplied from two coursess (a) from the pupil teachers classes at Shoreditch Technical School, which in 1909 was turning out about ten teachers a year, and (b) from Saturday classes of teachers and sectionics. The four-year course for teachers at the Shoreditch Technical School was as follows:

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Geometry		1 1/2	1 1/2	0	0
Cerdboard Work Machine Drawing		0	0	1/2	1/2

The practice teaching was done in classes of boys that came to the school and in the manual center of the city. (Al, pages 262-64)

Beginning of Student Teacher Education in America. The education of industrial arts instructors in America had a very rude beginning. The first classes were organized by Edward A. Sheldon (1823-1897), Superintendent of Schools in Oswego, New York, in 1861. This school was known as the Oswego Training School. A crude shop was established in the basement, and a janitor, who was a good mechanic, was put in charge of the class. From this beginning, the industrial arts education program has developed into one of the major divisions of modern educational curriculum.

In 1893-94 the name of the college was changed from the New York
College for the Training of Teachers to Teachers! College. The manual
training faculty was strengthened by John H. Mason, who came from Wisconsin to be associate professor, and several instructors were added to
the staff. The number of courses in manual arts was increased from seven
to fifteen. Especially significant additions being three professional
courses which were announced as follows:

A. History and Principles of Manual Training
One period each week, Wed., 1:00 to 2:00.
Origin and development of the manual-training idea;

some characteristics of manual-training in Sweden, Germany, France, England, and America; educational principles underlying manual training; a study of equipment and courses of instruction for elementary and secondary schools; the manual training high school; its distinguishing characteristics and its place in the American system of education.

Economics of Planning, Equipping, Organization, and Management of Manual-Training Schools. (to be given the first time in 1894-95) Planning with reference to site, location, points of compass, rooms required, size of each and location with reference to use, lights, ventilation, economy of heating, accessibility and convenience; tools and appliances required to give range of work; when and how to purchase tools and machinery, arrangement of same with reference to their use, convenience, and safety of operation; selection of motive power; location of line shafts, kind of hangers, belting, and other materials required; fixing of responsibility, arrangement of recitation and work periods, duties of engineer, janitor, and teachers; management, with reference to efficiency and economy in the instruction of classes and in the use of materials in the workshops.

C. Observation and Practice Teaching.

From 2 to 6 periods each week.

A course affording opportunity for students to observe and to teach, under the eyes of a critic teacher, grammer and high school classes from the Horace Mann School in the various lines of work taught in the department. This course is given only in the senior year. Each student must observe and teach in at least two subjects during the year, and no student will be recommended for a diploma whose work in this course is unsatisfactory. (A7, pages 468-469)

Extent of Academic Directed Student Teaching. Long and thorough preparation in skills and information is necessary to attain teacher status in industrial arts. There is a need for the education of well-prepared potential industrial arts teachers to handle large classes in the newer types of general shops.

There is hope that schools permitting an academic directed teaching are not growing but rather are diminishing in number. There may be some value in industrial arts teacher-education students doing some directed teaching in academic subjects, but it would have its limitations. It would have value in small communities where a teacher must be ready to teach many subjects. To permit graduation on academic directed only, is unfortunate. The academic class is of little value as a total directed teaching experience for industrial arts. More than ever before modern industrial arts teachers must necessarily go out with adequate preparation to meet modern needs in large classes in industrial arts. (A3, pages 65-66)

How is Oklahoma educating her teachers of industrial arts? Are methods of such a nature as will result in effective and successful implementation of the industrial arts philosophy so generally accepted today? Some of the answers to these questions will be given in the chapter which follows.

CHAPTER III

REPORT OF THE SURVEY IN INDUSTRIAL ARTS TEACHER EDUCATION PROGRAMS IN FOUR SELECTED OKLAHOMA COLLEGES

Much of the success of the industrial arts teacher depends upon the student-teaching program provided by the colleges that offer training in this department. It is therefore important that an adequate student-teaching program be administered by all colleges preparing teachers in industrial arts. Because of certification requirements, considerable uniformity exists among the colleges, however, there are some important variations, particularly in provisions for student teaching.

Method of Study. To secure the needed data in reference to the study of student-teacher education programs in the four colleges selected, questionnaires were submitted to the heads of the industrial arts departments of these colleges. A copy of the questionnaire is included in Appendix B. The writer was able to supplement the information included in the questionnaires by personal visitation and interviews with instructors and practice teaching supervisors at the different colleges.

The purpose of the questionnaire, visitations, and interviews was to learn the nature of the student-teacher education programs in these colleges. Since the data were carefully checked by the instructors of student-teacher education, it is believed that they have high validity.

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2. As network of tracking compen temper the same time the sindert teacher is delay practice teaching?

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- 3. Progressy of teaching cossions of prochice teacher with his popular latter. Site days a week
- A. Preguency of etudori teacher session with the enpervious teacher, and length of seculari

Veries a lot, from one to five nimites defin, to ten to thirty nimites weekly.

5. Length of pariod practice tender devites to testing hebschold extel

For more majors, two hours a der for sinkteen weeks

6. There is practice teaching denot (a) The institution's laboratory school? (b) Cooperating public school? (c) Both, Isboratory school and the public school?

The conservation relate school

7. Hinium maker of secoster house precises teaching required in industrial oris.

have exected hours. Birit exected hours recommend.

confor electrical and must have completed a minimum of their openerter bours in industrial cris. This is a prorequisite that applies to all industrial arts practice tenchars. A course in teaching nathods is taken at the same time that the practice teaching in dens. The program provides for the practice teacher to must his class five days a week, usually for two hours such day for a full screeter of eighteen usels. He also neets with his supervisor teacher for a nothode course ten to thirty minutes veelely or as the need arises. The daily sessions of the practice teacher with his supervisor is extremely short, from one to five minutes.

The practice teaching is done in a cooperating public school. In the case of Northeactern State College, this plan of practice teaching is located on the college carpus and the high school within three blocks of the college. Little time is lort by the practice teacher in reporting to his classes.

A percoval interview with the head of the industrial arts department of the college revealed come interesting information. No changes were recommended in the course requirements or the number of conceter hours of professional training for industrial arts teachers. The "Block Flan" was favored to allow student toschers one-balf day of uninterrupted time for teaching and observation. It was believed that the two hours per day observation and teaching by atmient teachers was not satisfactory. Under this plan the practice teacher did not have an opportunity to perticipate in extra-curricular activities of the actual and as a consoquence was unable to share in the school's total program. One of the chief weaknesses of the progrem as now operated in the lack of a closetio-up between the industrial arts teachers of the college and Was teacher expervisors in the conjugating schools. This situation is due to the heavy teaching load of the college staff. It was believed that if more time were allowed for conferences between the college industrial arts teachers and the expervisor teachers of the ecoperating schools, the teaching problems of the precise teacher could be more readily corrected.

East Central State College, Ada, Report

1. What is the prerequisite to practice teaching industrial arts as to credit hours or classification?

Senior standing (ninety semester hours) with sixteen semester hours credit in industrial arts. Other courses required: Principles and management, education, paychology, tests and measurements, and special methods courses.

2. Are methods of teaching courses taught the same time the student teacher is doing practice teaching?

Yes, the heed of the industrial arts department has daily conferences on methods during student teaching. He exercises continuous supervision.

3. Frequency of teaching sessions of practice teacher with pupils?

Daily, five times a week

4. Frequency of student teacher sessions with the supervisor teacher and the length of session?

Daily, if needed, and one special hour conference with all practice teachers weekly.

5. Length of period practice teacher devotes to teaching industrial arts?

We like for them to devote all afternoon, two hours. We advise a minimum of one hour deily in camena laboratory school, and one hour daily in cooperating school.

6. Where is the practice teaching done?

In the college's laboratory school and in the cooperating schools.

7. Minimum number of semester hours required of practice teaching in industrial arts?

Six semester hours of credit; we advise cight semester hours.

The prerequisite for a practice teacher in industrial arts at East Central State College is senior classification (minimum of ninety senester hours credit), with at least sixteen senester hours completed in industrial arts. In addition to these requirements there are cartain education courses which must have been completed: educational psychology, educational tests and measurements, principles and measurement, and special methods courses. Some of these courses may be taken concurrently with the practice teaching.

teacher does his work. The head of the industrial arts department has deally conferences on methods and techniques with the practice teacher. He exercises continuous expervision throughout the practice teaching period. The expervisor meets with the practice teacher deally when necessary. A one-hour weekly conference with all practice teachers is a requiser part of the practice teaching program. At these sessions the practice teacher has an opportunity to present problem that have disturbed him. In turn, it gives the expervisor a chance to make constructive suggestions for improvement of teaching.

In reference to the length of period the practice teacher devotes to teaching industrial arts, it is the policy of the college to require the hours, but adjustments sometimes have to be made because of conflicts in schedule and other circumstances. A minimum of one hour practice teaching daily in the compact laboratory school and one hour daily off-companied in the cooperating school is recommended. The practice teaching is done in both isboretory school and the cooperating school in general.

The minimum practice teaching exciti hours required ere six, however, eight hours are strongly recommended.

Oklahove A. sof N. College, Stillwater, Report

1. That is the prerequisite to preclice teaching in industrial acts as

to credit hours or chancilication?

Senior electification and three percenter hours of teaching notheds.

2. Are methods of teaching courses tought the same time the stationt teacher is doing practice teaching?

O

- 3. Frequency of teaching sessions of precise teacher with pupils?

 <u>Daily, three days a week, five hours a day.</u>
- A. Prognancy of student teacher ressions with expervisor teacher, and length of the sessions?

Not frequent enough and no definite length of time

5. Length of period practice teacher devotes to teaching industrial carts?

Five hours per week for thirts-ciz weeks.

6. Where is preside teaching densi

fooperating public schools, and freshmen college courses on the commune.

7. Minimum number of perceptor bours of practice teaching required in industrial arts?

Six newepter hours

The prerequisite to practice isochlog industrial arts at Oldahora Agricultural and Machanical College is senior classification and three hours credit in nothods of teaching before the student does his practice teaching. The frequency of practice teacher pessions with his students very from one say a week to five days a week. Daily sessions are from one to five hours each say, or equivalent to five one hour sessions per week. There is no regular schedule for conferences between the supervisor and the practice teacher. Conferences, however, are held whenever the need arises.

The length of period the practice teacher devotes to teaching industrial arts is five hours per week for a period totaling thirty-six weeks. The practice teaching program is administered through cooperating public schools, and the freshmen college classes on the Oklahoma Agricultural and Mechanical College campus.

The minimum requirement of practice teaching credit for graduation is six hours. No changes were recommended in the courses required or the number of professional hours credit required. It was recommended that a student teacher spend one-half semester away from the college (off-campus teaching) for nine semester hours credit, and that funds be provided for a director of a student teacher training program whose duty would be to manage and supervise the off-campus program.

University of Oklahoma, Norman, Report

1. What is the prerequisite to practice teaching industrial arts as to credit hours or classification?

Senior classification

2. Are methods of teaching courses taught the same time the student teacher is doing practice teaching?

Yes

- 3. Frequency of teaching sessions of practice teacher with pupils?

 Daily
- 4. Frequency of student teacher sessions with supervisor teacher and length of sessions?

Daily, one hour sessions

5. Length of period practice teacher devotes to teaching industrial erts?

Two hours daily

6. Where is the practice teaching done?

Cooperating public schools and University laboratory school located on the North Base

7. Minimum number of hours practice teaching in industrial arts required?

Nine semester hours

Similar to the Oklahoma A. and M. College, the University of Oklahoma requires senior classification for practice teaching in the industrial arts. Nethod courses are taught concurrently with the practice teaching. The practice teacher meets his pupils daily, five days a week. The length of practice teaching periods is two hours. It will be observed that the practice teacher devotes ten hours weekly with his pupils. The practice teacher has daily conferences of one hour with his supervisor. The University uses the laboratory school and the cooperating public schools in its industrial arts practice teaching program.

A minimum of nine semester hours practice teaching is required for graduation. No changes in course requirements or professional hours credit were recommended. It was suggested that the practice teacher might profit more by having the student teaching spread over two semesters instead of one, as it is now being done.

A comparison of practices in the teacher education programs in industrial arts of the four colleges studied was made by assembling pertinent data in table form. Table I, on the following page, will provide a convenient means of analysis and comparison.

Comparison of Student-teacher Education Practices. The prerequisites for practice teaching industrial arts are uniform among the colleges in

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7. Hardmen native of house of prooffee teaching roquired.

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TAULATION OF ELICHE INCOMES PLOYIGE IN

		Industrial with of Ivan Orlains Colliges			
	Guestions Fertulating to Tendier Phieselm	l'articeatern Stato Collago	Sof Control State College	Official A. C.D. College	University of Orienan
*	That prescriptifoe required for practice teaching as to closeifiertion or credit?	Comios. 12 iers. Cr. Irelius. Arto	Serior, 16 Nrs. (r. In. Krts, Na. 6.	Serior, 3 kms. Ind. Arts ft. Retions	option:
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c.	Frommer of traching continues of practice teacher	Pitro degre a modi	Time degrees to the track	Bally, 2 deys s wool, 5 bours a dey	litine degle a week
*	Frequency of stadent teacher consions with emperation and length of montons?	Verifes, 10 to 30 rife. a voci	is neoded.	ic definite	raily, 1 im.
	length of period preeties tercher dovotes to teaching inhistrial crist	2 lato, por doy, 12 mode	or being	5 hours woolsty	
\$	there is practice teaching terms. Introduced interpretations, school, cooperating school, boths	Cooperating Public School	Cath. Settool. Catal Coop. Patalifo Seleool.	Coop, Selbol and College Froskman Cleus	Coop, Cellon, Crit lab. School

one respect. All require senior classification. In addition, Northeastern State College requires twelve corrector hours credit in industrial arts, and East Central State College requires absteen senester hours credit in industrial arts before being permitted to do practice teaching. The Objection Agricultural and Machanical College, in addition to the senior classification, requires three senester hours of credit in teaching methods. All of the colleges have additional requirements in contain prescribed education courses before a student is parmitted to do practice teaching.

Courses in nothode of teaching are required concurrently with the practice teaching in all the colleges except Orlaham Agricultural and Rechanical College, and it requires three exactor hours of methods before a student-teacher is paralited to do practice teaching.

The frequency of teaching sessions of the practice teacher with his pupils is fairly uniform. Five days a week is the general practice, except Chlahorn Agricultural and Mechanical College which provides some flexibility in the number of sessions. The total time is equivalent to five times weekly.

The frequency of the precise tencher session with the supervisor veries stong the colleger. The University of Oklehem provides rose time for conferences than so the other colleges. In most cases the plan provides for conferences as needed.

The length of the cession which practice teachers devote to pupils is in general uniform. Each session is of one hour duration.

In reference to the place whose practice teaching is done, the prectice varies to include the laboratory school, the cooperating public school, college freshmen classes, with a combination of these places in some of the colleges.

There is considerable difference of practice among the colleges in the minimum number of hours of teaching required in industrial arts. Oklahoma A. and M. College had six semester hours credit requirement, whereas, the University of Oklahoma made the highest requirement, nine hours. The other colleges were four and six hours.

Several constructive suggestions were made for improvement of the programs of practice teaching. The Head of the laboratory school at Rest Central State College recommends that the minimum time the practice teacher devotes to practice teaching be two hours daily for a full semester, with one hour spent in the laboratory school, the other in the cooperating public school. This college also approved a minimum of eight hours practice teaching, instead of the six hours which is now required by this institution. An associate professor of the industrial arts education department at the Oklahoma A. and M. College proposed that student teachers spend one-half semester sway from the college campus teaching industrial arts in a cooperating public school. Wine hours credit was suggested for this work. It was also proposed that funds be provided for a director of practice teaching who would supervise the entire practice teaching program. The Head of the industrial education department at the University of Oklahoma expressed the belief that practice teaching should be spread over two semesters rather than concentrated in the one samester.

One of the important steps in a student-teacher educational improvement program is to evaluate the results of student-teacher programs. Each of the colleges included in this study was requested to submit its criteria for evaluation of its student-teachers. Copies of these criteria are presented in Appendix C of this report.

Interviews with the directors of the student-teacher programs in the four colleges revealed that all the colleges, except one, used the same criteria to evaluate the teaching of student-teachers in industrial arts as was used to evaluate the teaching in other areas of the curriculum. While most of the skills, techniques and other attributes that would result in good teaching in an academic area of the curriculum would contribute to successful teaching in the non-academic, i.e. industrial arts, it appears that there are other essential teaching skills which should be included in the criteria for evaluation of the teaching of industrial arts.

A good example of a teaching skill that applies particularly to industrial arts would be safety practices in the shop. Attention to this problem would not necessarily be of concern to the teacher of mathematics or English literature, but it is of great importance that the teacher of industrial arts develop safety attitudes and practices in his classes. Gere of tools and good housekeeping are other learning products necessary in the industrial arts teacher education program. The criteria presented by the supervising teacher to evaluate the skills of practice teachers in industrial arts contain few provisions where consideration may be given to the teaching skills peculiar to this area of the curriculum.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions in this study should be prefaced by an acknowledgment of its limited scope. No new discoveries are claimed in this study of the industrial arts student-teacher education program in Oklahoma.

There are however, certain philosophies, conditions, and practices revealed in this study that verifies and supports other studies made in the same field.

To say that industrial arts teachers are guided by a common philosophy as to the place of this discipline in the educational program expresses no new concept. Industrial arts has been thought of as a part of the general education program for the last quarter century. However, this study does reveal that there are improved teaching practices in the implementation of this philosophy and that these improved teaching practices are becoming more general in our schools.

Conclusions. The four colleges included in this study of studentteacher education programs in industrial arts are more alike in their training programs than unlike. This condition certainly warrants a conclusion that they are guided large by a common philosophy in this area of the curriculum. Of course there are different practices made necessary by lack of uniformity in conditions and circumstances.

The four colleges were uniform in their requirements of senior classification for practice teaching. This common practice is desirable

for several reasons: the practice teacher has had a background of general education; he has had time to complete needed courses in education, psychology, and methods; he is more firmly oriented vocationally; and only a short time will lapse between his "practice" teaching and when he will make application of his teaching competencies in his own classroom.

The differences in additional prerequisites for practice teaching among the colleges were probably more formal than real. East Central State College required certain courses in education and a minimum of sixteen hours credit in industrial arts. Northeastern State College required twelve hours credit in industrial arts. It is quite probably that the colleges that make other additional prerequisites accomplished the same results in course requirements through a close, personal counseling program. There are always intangible forces that cannot be recorded in a questionnaire, i.e., sympathetic and understanding rapport between supervisor, teacher, and student.

The frequency of the teaching sessions of the practice teacher with his class were in general uniform among the colleges. Again, different conditions made some flexibility necessary in this requirement. There was real evidence that all the colleges placed the individual welfare of the student as more important than conformity to a fixed, static order of the program.

In respect to the frequency of conferences between supervisor and practice teacher, there was considerable variation in practice. Without doubt this condition was due to limited supervisory personnel. The practice at the University of Oklahoma of allowing one hour daily for conferences between supervisor and practice teacher should be very desirable.

This gives opportunity to correct errors in teaching practices before they become fixed or established habits. Then too, it will give the practice teacher more confidence in himself because his problems have been talked through with the supervisor. Whenever possible the supervisor should have enough released time from the teaching schedule to give adequate supervisory and consultation service to the practice teacher.

All of the colleges use cooperating public schools in the practice teaching program. This is a commendable practice because it gives more realistic experience than is found in the laboratory school. In most laboratory schools, the pupil personnel is not representative of a cross section of the public schools. This does not mean that there are not certain advantages in using a laboratory school for practice teaching. There are advantages, such as controlled conditions of teaching in reference to class size, supervision, experimental practices and attitudes, all of which prevail in the laboratory school more than in the public schools.

A weakness that seems to exist in a few instances was the absence of a close tie-up between the laboratory school and the cooperating school. When this condition is present, the practice teacher lacks the helpful counsel and supervision needed in an effective student-teacher education program.

Recommendations. The suggestion that a plan be devised whereby the practice teacher spends nine weeks off-campus in a cooperating school has great merit if proper supervisory service can be provided. The practice teacher under this plan would get the feel of real teaching

experiences and would be able to participate in the total school program.

Successful teaching is more than doing a good job in the classroom. It

involves learning services in all of the pupil's activities — playgrounds,

athletic fields, corridors, lunchrooms, assemblies, etc.

The four institutions were not uniform in requirements of the mumber of hours of practice teaching in industrial arts. The range was four to nine hours. When determining the number of hours of practice teaching that should be required several factors must be considered.

Course requirements in any area mean less requirements in other areas when the total number of hours for graduation remain the same. The problem then becomes one of considering relative values of the different requirements in contributing to effective student-teacher education. The most desirable requirement in practice teaching probably lies between the two extremes reported and might well be set at six hours.

Data assembled by questionnaire, visitation, and personal interview all pointed to high professional interest of the industrial arts personnel in improvement of the student-teacher education program and an open mind in working for this improvement.

APPENDICES

- A. A Selected Bibliography
- B. A Copy of Questionnaire Used in Study
- C. Copies of the Practice Teacher Evaluative Criteria
 Used by the Four Selected Colleges

APRILITY A

A Selected Bibliography

A SELECTED BIBLIOGRAPHY

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APPENDIX TO

A CONT OF QUARTICE HARD IN STUDY

A SUMMER OF INDUSTRIAL ALTS PRACTICS TRACERS INCATION II) SPREATED GELARIZA CULLIGIS

Directions: Pieces fill in all blanks or check the ensuers to questions so they apply to INDUSTRIAL MAIN TRACHES. INDUSTRIAL MAIN TRACHES.

/	Part I
1.	That is prerequisite to practice teaching LIDUSTRIAL ARTS as to
	credit hours or classification.
in a	Are nothedo of tecching courses tought the some time the student
	teacher is doing practice teaching.
2.	Prognammy of teaching sessions of practice teacher with pupils.
4.	Prequency of student teacher secolons with supervisor teacher, and
	Longth of scotion.
5.	Length of period practice teacher devotes to teaching industrial
6.	There is precise teaching done?
	a. The institution's laboratory school.
	b. Cooperating public schools.
ų.	c. Both: Institution's Islandory scienci.
	Cooperating public schools.
	(Indicate the proporetion of time devoted to each)
	d. Other sources, where?
7.	Minimum number of semester hours practice teaching in industrial

PART II

Please make recommendations of changes which you think would improve teacher training in industrial arts education. Include change in course, hours devoted to course, practice teaching program, econdination, or other feature which you think will improve teacher training in Oklahome colleges.

40 · · · · · · · · · · · · · · · · · · ·	1.	Chemic	11	COURSE	remirements	4
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- 2. Change in minimum number of semember bears of professional training for industrial arts toroiser.
- 3. Change in practice teaching program:
 - a. Do you flower "block plan" to allow student teachese one-half day of uninterrupted time for observation and teaching?
 - b. Do you fower one hour period teaching and observation each school day?
- 4. Add my constructive coment that you wish to make about industrial arts practice teacher education.

APPLICATION OF

COPTED OF THE PEACENED TRADERD EVALUATIONS
CRETERIA HOUD DE THE FOUR SCHEOTED COLLEGES

ESTIMATE OF TEACHER'S QUALIFICATIONS BASED UPON TRAINING SCHOOL RECORD

Northeastern State College

	A	В	С	D	E		A	В	C	D	E
Appearence						Ability to Take Criticism					
Attractive Personality						Attention to Physical Features					
Voice			-			Care of Materials					
Emotional Balance						Preparation of Subject Matter			L		
Courtesy	\perp					Use of Illustra- tive Materials	_				L
Enthusiasm						Development of Pupil Habits and Attitudes					
Forcefulness						Skill in Diagnosis					
Resourcefulness						Stimulation of Pupil Activity					
Use of English						Provision for Indi- vidual Differences			L		
General Knowledge						Skill in Meesurement					
Specific Knowledge						Ability to Question					
Cooperation						Ability to Control					
Ability in Self Criticism											

Signature of Training Teacher

CHINET TIMES EVALUATED

State Control State College

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. TEACHER CHARACTERISTICS CONTRIBUTING TO GOOD TEACHING	9	18-7	5-4	3-2	1-0	
A. Personal Equipment - Personality		1				
1. Leadership - Initiative						
2. Cooperation - Reliability						
3. Appearance						
4. Voice						
5. Self Control						-
6. Poise - Self Confidence	1	1				-
7. Friendliness - Sympathy - Courtesy	1	1		 		1
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9. Health - Physical Condition	+	1-			-	-
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B. Professional Equipment	+-		-	-	-	-
1. General Scholarship	-	+			-	-
2. Knowledge of Subject Field	-	-				L
3. Professional Growth and Interest	-	-			-	L
4. Command of English						L
5. Knowledge of Professional Literature						
	1					
Average						
I. TEACHER ACTIVITIES CONTRIBUTING TO GOOD TEACHING	1					
A. General Classroom Techniques		1		†		
1. Planning - Organization of Materials	7					
Preparation of Work	1					
2. Management of Classroom Routine,	1	1	1		-	-
Materials and Equipment (Housekeeping)	1	1	-	1		
3. Performance of Special Assignments	1	1	-	-	-	1
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5. Functuality - Economic use of time	+					+
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1. Assignment of Work (Pupil Participation)	+	+	-	-		-
2. Presentation - Instruction - Explanation	-	-	-			-
3. Motivation - Stimulation of Purposeful Activity	-	-	-			-
4. Distribution of Pupil Participation	-					L
5. Questions - Tests - Measurements		-				
6. Reviews - Drills - Remedial Activities						
7. Supervision of Study						
8. Discipline						
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Average						1
II. CHILD GROWTH RESULTING FROM GOOD TEACHING	T	1				T
1. Acquiring Information - Mental Development	1	1				T
Interpretation						1
2. Pupil Cooperation, Participation and Response	1	1	1	1	1	1
3. Development and Growth and Pupil Interest,	+	1	1-	1	1	1
Attitude and Appreciation	+	+	-		-	+
4. Development of Pupil Habits of Study	-	+	-	-		1
5. Use of Tools of Learning	-	+	-	-	-	-
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PRACTICE TEACHING IN INDUSTRIAL ARTS I.A.E. 413 and 423

RATING SHEET FOR DEMONSTRATION TEACHING

Oldahoma A. and M. College

Demonstrator

Topi	e of Lesson	-	-	-
pers work poor	All observers of demonstration teaching are asked on observed on the points listed below. Rate each item below: 1, for excellent; 2, for a that should be made more effective; and 4, for w . Your rating will be given the person giving the are asked to help him as you would like for him to	good s demos	ork; ou consi	, for
	Teaching Procedures	R 1	tines 2 3	4
1.	Was it clear that the instructor had determined	T		T
	just what he was going to teach?			1_
2.	Was there sufficient evidence of advanced planning and preparation?			
3.	Did the instructor display a thorough knowledge of the subject?			
4.	Did the instructor create an interest to learn?			T
5.	Did the instructor have sufficient appreciation of the difficulties of the learner?			T
6.	Did the instructor use the teaching steps?			T
7.	Did he use methods in each teaching step suited to the lesson and the group?			T
8.	Did the instructor stay on his subject or did he scatter?			1
9.	Was the instructor's voice and language acceptable and cleer?		9	
10.	Did the instructor secure satisfactory class participation?			
11.	In the final check-up, did the instructor make sure all understood the lesson by asking proper questions?	V.		
12.	On completion of the lesson, could the learners do the work unaided and did they possess the essential knowledge?			

INTERVIEW EVALUATION SHEET

Oklahoma University

Estimate of Certain Characteristics Related to the Teaching Potentiality of Students Enrolling in Education

> Department of Teacher Education, University Laboratory Schools, College of Education

Evaluate the candidate interviewed on the basis of the following items, making whatever additional comments are necessary to express with greater clarity your impressions. Check the adjective which, in your opinion, best describes the characteristic under consideration. Do not check any adjective unless it adequately states your impression or for which you do not possess sufficient evidence to support your decision.

Home	Addx	ess	is		Age	Teach	ing Exper:	lence
-	ORAL PHY	-	AIFTEATTONS			EVALUATIO	N	
	A.		meral appearance	Striking	Attrac- tive	Ordinary	Poor	Repul-
			Appearance Defects	None	Un- Notice.	Slightly Notice.	Quite Notice.	Pro- nounced
			Posture	Excel- lent	Good	Average	In- ferior	Sloughy
		3.	Grooming	Immacu-	Good	Neat	Cere-	Untidy
		4.	Vitality	Vigorous	Strong	Fair	List-	Weak
		5.	Maturity	Matured	Well- Develop-	Meturing	Poorly Develop- ed	
	В.	Voi	ice	Excel-	Pleas-	Ordinary	Weak	Umpleas ant

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	I. Special Addition	***********				
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			Proced.*	High	Con- Coites	e:	in- cicile

VII. COMDINEIUM

As a potential teacher, this candidate shows promise of being (a) excellent, (b) good, (c) everage, (d) poor, (e) extremely poor.

Strong points

West points

Connente

VITA

Lawrence N. Reynolds Candidate for the degree of Master of Science

Report: A Study of Industrial Arts Student-Teacher Education Progress in Four Selected Oklahoma Colleges

Major: Industrial Arts Education

Biographical:

Born: December 16, 1903, at Wydeman, Arkanses Undergraduate Study: East Central State College, Ada, Oklahoma, 1925-1936

Graduate Study: Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma (summer terms)

Experiences: Taught school as grade principal in 1930. Junior high schools principal in 1932. Taught industrial arts 1933-38. National Youth Administration supervisor 1938-42. Worked one year as a Junior Mechanic at Tinker Field, Midwest City, Oklahoma. Have taught industrial arts in Ada Junior High School for eleven years. President, Oklahoma Industrial Arts Associa-

Membership: Oklahoma Industrial Arts Association, American Industrial Arts Association, Oklahoma Educational Association, Parent-Teacher Association, Methodist Church, Pontotoc County Sportsmens Club Inc. (past-president), and the schoolmens organization known as the Red, Red Rose.

Date of final examination: July 1954

REFORT TITLE: A Study of Industrial Arts Student-Teacher Education Programs in Four Selected Oklahoma Colleges

MAN OF AVERE: Laurence M. Reguelás

REFURT AWEER: Cary L. RILL

The contents and form of this report have been checked and approved by the author and report advisor. Instructions for typing and arranging the report are swellable in the Graduate School office. Changes as corrections in the report are not rade by the Graduate School office or by any committee. The copies are sent to the bindery just as they are approved by the author and faculty advisor.

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