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An Analysis and Evaluation of Industrial Arts Teacher Education Programs and Teacher Personnel Needs in South Carolina

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To the Graduate Council:

I am submitting herewith a dissertation written by Alfred Franklin Newton entitled "An Analysis and Evaluation of Industrial Arts Teacher Education Programs and Teacher Personnel Needs in South Carolina." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration.

E. Curtis Henson, Major Professor

We have read this dissertation and recommend its acceptance:

John W. Gilliland, Howard F. Aldman, Ira N. Chiles, Joe L. Reed, Orin B. Graff

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

April 7, 1961

To the Graduate Council:

I am submitting herewith a thesis written by Alfred Franklin Newton entitled "An Analysis and Evaluation of Industrial Arts Teacher Education Programs and Teacher Personnel Needs in South Carolina." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Supervision.

Elbert L. Henson
Major Professor

We have read this thesis and
recommend its acceptance:

John W. Gilliland
Joe L. Reed
Gray N. Chiles
John B. Gaff
Howard F. Alderman

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Acting Dean of the Graduate School

AN ANALYSIS AND EVALUATION OF INDUSTRIAL ARTS
TEACHER EDUCATION PROGRAMS AND TEACHER
PERSONNEL NEEDS IN SOUTH CAROLINA

A Thesis
Presented to
the Graduate Council of
The University of Tennessee

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Alfred Franklin Newton

June 1961

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CHAPTER I

INTRODUCTION

A. GENERAL INTRODUCTION

In order to provide an education that will function effectively in the lives of all children, youth, and adults, there is a need to re-examine the total educational system and to eliminate, revise, or initiate programs in compliance with the needs of the people. Continuous re-examination is needed in all areas of education, but it is especially important in teacher education programs. It seems reasonable to assume that prospective teachers graduating from these programs will have the opportunity to contribute to some of the future changes in public education. The role these new teachers play in the future changes will most likely reflect the effectiveness of their teacher education programs. If teacher education programs fail to acknowledge the importance of, and need for, continual change to keep pace with changing times, their graduates will be inadequately prepared to cope with the present-day problems in public schools. This should behoove administrators of teacher education programs to strive toward developing leadership in the teaching profession.

The need for re-examination in the area of industrial arts teacher education is critical. Industrialization and

technological changes which influence changes in the needs of society, directly affect the American system of education. Although the effects of these changes are experienced throughout the educational system, industrial arts education should be most receptive and active in meeting the changing needs.

Indications are that industrial arts teacher education programs in South Carolina colleges are not meeting the needs of the service area in terms of graduating a sufficient number of adequately prepared prospective industrial arts teachers. Assuming this to be true, it seemed reasonable to attempt to identify some of the major causes of this inability to meet the needs and to present implications as appear pertinent to the industrial arts teacher education programs.

B. STATEMENT OF THE PROBLEM

The problem of this study was to evaluate the industrial arts teacher education programs in South Carolina colleges in terms of the industrial arts teacher personnel needs of public high schools in the state and the criteria accepted by the American Council on Industrial Arts Teacher Education.

C. BASIC ASSUMPTIONS

Some of the basic assumptions underlying this study are presented in each of four major categories: assumptions related to the nature of American society, assumptions related to the nature of education in the American society, assumptions related to the nature of industrial arts teacher education, and assumptions related to the nature of industrial arts.

Assumptions Related to the Nature of American Society

The American society subscribes to the democratic way of life. A foundation concept of the democratic faith is belief in the worth and dignity of the individual. Each individual is unique and is believed to possess the potential to make some contribution to society. The democratic society believes in the essential equality of all individuals. This includes equality before the law, equality in dignity as a human being, and equality of opportunity for education suited to the individual's needs and abilities. It is assumed that with proper recognition of such equality each person has the opportunity to achieve to the maximum of his ability.

Other fundamental characteristics of the democratic society include the beliefs that men have a right to govern themselves, that the state exists for the welfare of the individual, and that government derives its power from the

consent of the governed. The individual has the responsibility, as well as the right to participate in decision-making activities which directly affect him.

Assumptions Related to the Nature of Education

Education is a social necessity. Each child must learn habits of social responsibility as defined by his society as well as learning how to produce products and services needed by himself and others. The objectives of American education may be listed under the following major headings: the objectives of self-realization, the objectives of human relationships, the objectives of economic efficiency, and the objectives of civic responsibility. These objectives get their meaning from their pertinence to local needs. Although education is a means of preserving vitally important local values, it also assists local people in adjusting to the demands of a complex society.

The full legal responsibility of education resides with the state. However, each citizen has the moral responsibility to support education. The state department of education is a legal agency which assists in the implementation of state educational policy and which attempts to provide services needed by local systems. The actual operation of school systems is the responsibility of local administration.

Assumptions Related to the Nature of Industrial Arts
Teacher Education

It is the responsibility of the state to provide institutions of higher learning which prepare a sufficient number of well qualified industrial arts teachers to meet the state's educational needs. Departments of industrial arts teacher education must prepare prospective teachers for industrial arts subjects needed by the schools in the service area. These departments must be organized and administered so that prospective teachers receive knowledges, skills, and attitudes necessary for successful teaching of industrial arts subjects and activities.

Industrial arts teacher education programs should be aware of the special needs of students and make every effort to recruit desirable youth, insure professional growth, and graduate and place capable teachers. University or college services should be utilized in every possible way in order to provide for the special needs of students majoring in this program.

The faculty for industrial arts teacher education should possess professional qualifications comparable to those of any other college faculty members. In addition to meeting regular requirements, they should be technically competent in one or more skilled area of industry.

Industrial arts subject matter courses in the teacher education curriculum should be improved continuously

to provide for industrial changes in materials, tools, and processes as well as to provide for new developments in teaching methods and techniques. The curriculum should also provide the prospective teacher with a broad variety of modern industrial experiences. Curriculum development is a function of the departmental staff in cooperation with college curriculum committees and coordinated with the state department of education.

Student teaching in the industrial arts teacher education program should be the responsibility of the industrial arts department. Prospective teachers should be given the opportunity to receive teaching experiences which are most similar to those received by in-service teachers. This can be accomplished by making student teaching assignments in public schools which have an effective program of industrial arts. Student teaching experiences are a vital part of the industrial arts teacher education program.

The preparation of efficient industrial arts teachers requires adequate shop facilities and laboratories. The industrial arts department should provide facilities in relation to the needs of teachers, pupils, and industry in the service area.

The standards and evaluative criteria developed by

the American Council on Industrial Arts Teacher Education¹ were assumed to be the most acceptable instruments upon which to evaluate industrial arts teacher education programs in South Carolina colleges.

Assumptions Related to Industrial Arts

The function of industrial arts education in the public schools is to provide the individual with an adequate understanding and knowledge of tools, materials, processes, and relationships of industry needed to assist in the making of adjustments to changes that have taken place and that continue to take place in the American way of life. In an attempt to clarify this function the objectives of industrial arts, as developed by the American Vocational Association, are presented below:

Objectives of Industrial Arts

1. To develop in each pupil an active interest in industrial life and in the methods and problems of production and exchange.
2. To develop in each pupil the appreciation of good design, materials, and workmanship and the ability to select, care for, and use industrial products wisely.
3. To develop in each pupil the habits of self-reliance and resourcefulness in meeting practical situations.

¹Verne C. Fryklund and H. L. Helton, The Accreditation of Industrial Arts Teacher Education, Seventh Yearbook of the American Council on Industrial Arts Teacher Education (Bloomington, Illinois: McKnight & McKnight Publishing Company, 1958), pp. 32-56.

4. To develop in each pupil a readiness to assist others and to join in socially accepted group undertakings.

5. To develop in each pupil desirable attitudes and practices with respect to health and safety.

6. To develop in each pupil a feeling of pride in his ability to do useful things and to develop certain worthy free-time interests particularly in the crafts.

7. To develop in each pupil the habit of an orderly and efficient performance of any task.

8. To develop in each pupil an understanding of all kinds of common graphic representations and the ability to express ideas by means of drawings and sketches.

9. To develop in each pupil skill in the use of common tools and machines and an understanding of the problems involved in common types of construction and repair.²

D. LIMITATIONS

While there were numerous closely related areas which might have been included in a study of this nature, attention is focused only on two major questions: What are the personnel needs for industrial arts programs in South Carolina high schools? How effective are the industrial arts teacher education programs in Clemson College and South Carolina State College as compared with the standards

²American Vocational Association, A Guide to Improving Instruction in Industrial Arts, Industrial Arts Policy and Planning Committee (Washington: American Vocational Association, 1953), pp. 19-28.

developed by the American Council on Industrial Arts Teacher Education?

Vocational teacher education programs and technical education programs were eliminated from this study because of the vast differences in purposes and objectives between these programs and the program being studied. Also, a study embracing more than one area of teacher education seemed too unwieldy.

The portion of this study concerned with a state-wide survey of industrial arts was limited to information obtained by the questionnaire technique from high school principals and industrial arts teachers in the public schools of South Carolina. All junior and senior high school principals and industrial arts teachers were invited to participate in the survey. Only 266 principals and 109 industrial arts teachers chose to participate.

The evaluation of industrial arts teacher education programs was limited to the standards and evaluative criteria developed and accepted by the American Council on Industrial Arts Teacher Education. The evaluative instrument was administered at Clemson College by four faculty members who had industrial arts teaching responsibilities. Nine faculty members who had industrial arts teaching responsibilities administered the instrument at South Carolina State College.

E. DEFINITION OF TERMS

Some of the terms used in this study which may need clarification are defined as follows:

1. Industrial Arts. Industrial arts is the instructional shopwork of a non-vocational type which provides general educational experiences centered around the industrial and technical aspects of life today and offers orientation in the areas of appreciation, production, consumption, and recreation through actual experiences with materials and goods. It also serves as exploratory experiences which are helpful in the choice of a vocation.³

2. Industrial Education. Industrial education is a generic term applying to all types of education related to industry, including industrial arts education, trade and industrial education, and technical education.⁴

3. High School. The term high school refers to both junior and senior high school, or grades seven through twelve.

4. General Shop. The term general shop refers to a school shop designed and equipped to offer two or more areas of instruction in industrial arts. Such a shop may

³American Vocational Association, Committee on Research and Publications, Definitions of Terms in Vocational and Practical Arts Education (Washington: American Vocational Association, 1954), p. 15.

⁴Ibid., p. 16.

contain facilities for teaching woodworking, metalworking, ceramics, graphic arts, and electricity, or a similar combination of teaching areas. It is sometimes called comprehensive general shop, multiple activity shop, or laboratory of industries.⁵

5. Industrial Arts Teacher Supply. Only those teachers who graduate from a South Carolina College and meet the state certification requirements as an industrial arts teacher are considered as the supply of industrial arts teachers. Teachers who transfer from one position to another are not considered a part of the supply since they do not satisfy a demand but only shift the demand from the district they enter to the one they leave.

6. Industrial Arts Teacher Demand. The actual or anticipated need for teachers who are certified to teach industrial arts courses makes up the demand for industrial arts teachers.

7. Standards. Standards as used in this study refers to a predetermined level of attainment which efficient departments are expected to meet.

8. Criteria. Criteria refer to the collection of characteristics or activities which might show how nearly programs of industrial arts teacher education meet the

⁵Ibid., p. 8.

standards previously established.

9. Single-Purpose Department. Single-purpose department refers to that unit primarily concerned with the preparation of prospective teachers of industrial arts subjects in elementary, junior, or senior high schools. The curriculum leads to a bachelor's degree and meets the requirements for a teaching certificate in the state where the institution is located.

10. Multi-Purpose Department. Multi-purpose department refers to that unit concerned with the preparation of industrial arts teachers as only one of its objectives. The department may prepare teachers for other phases of industrial education including vocational education, technical education, and industrial training.

11. Service Area. The term service area as used in this study refers to the state of South Carolina.

F. PROCEDURE AND SOURCES OF DATA

The questionnaire technique was employed to obtain information pertaining to the personnel needs for industrial arts programs in the public schools of South Carolina. Two questionnaires were composed; one was designed for principals of public high schools in the state and the other was designed for persons actively engaged in teaching industrial arts courses in those schools. These

questionnaires were mailed in a packet addressed to the principal of each high school. The packet included a letter to the principal, the principal's questionnaire, the teacher's questionnaire, and a self-addressed, stamped envelope. Copies of the letter and questionnaires are presented in the Appendix.

Coded information from the returned questionnaires was punched into IBM electronic data processing cards. A tabulation of returned questionnaires provided data pertaining to personnel needs for high school industrial arts programs in South Carolina.

Available literature pertaining to the evaluation of industrial arts teacher education programs was reviewed with particular attention given to the criteria used in evaluating such programs. From the several studies presenting criteria, the accreditation standards and criteria developed by the American Council on Industrial Arts Teacher Education were selected for this study. Chapter III is devoted to a discussion of the development of these standards and criteria.

Arrangements were made, through correspondence and by interview with the administrators of industrial arts teacher education programs, to evaluate these programs. The standards identified in Chapter III were reviewed and accepted by each administrator, and plans were made to

administer an evaluative instrument by which the standards could be applied. Four members of the Clemson College faculty who had industrial arts teaching responsibilities rated the effectiveness of the industrial arts teacher education program at Clemson by completing the evaluative instrument. The four ratings were compared and a composite rating was established which represented the collective judgment of all raters.

Nine members of the South Carolina State College faculty rated the industrial arts teacher education program in that institution. Again, the ratings were compared and a composite rating of the collective thinking of the nine raters was used.

Facets of the industrial arts teacher education program which received an unsatisfactory rating were identified as areas which need improvement, or area of inadequacy. Ratings of seven or above identified areas which were considered as being strengths of the program.

G. REVIEW OF RELATED LITERATURE

A careful search of literature failed to reveal any study which might be considered comparable to this investigation. However, several studies were found which related to certain portions of this study. Only those aspects of the various studies which directly related to this

investigation are reviewed. They are discussed under the following major headings: (1) studies related to the status of industrial arts teachers and programs, (2) studies related to industrial arts teacher supply and demand, (3) studies related to the development of evaluative criteria for industrial arts teacher education programs, and (4) studies related to the development of industrial arts teacher education programs.

Studies Related to the Status of Industrial Arts Teachers and Programs

A doctoral study completed by Dr. Donald F. Hackett at the University of Missouri in 1953, "The Status and Need for Industrial Education in Georgia," is the most recent study of industrial education in the Southeastern region.⁶ His study was limited to the state of Georgia, but it is safe to assume that some of the reported conditions would prevail to some degree in South Carolina.

Hackett's study was made for the purpose of gathering information about the existing programs of industrial education in Georgia which could be used for future planning. One part of his study was devoted to the status of industrial arts teachers and programs in Georgia. Data for this

⁶Donald F. Hackett, "The Status and Need for Industrial Education in Georgia" (unpublished Doctoral dissertation, University of Missouri, 1953).

part of his study were obtained by means of interviews and through information forms received from industrial arts teachers. From an analysis of the data collected, Hackett presented the following conclusions pertaining to industrial arts:

1. Industrial arts programs are provided in less than one-fifth of the white public secondary schools in Georgia and in the majority of these schools, girls are not permitted to enroll in this subject.

2. Industrial arts teachers generally teach industrial arts classes only. Current practice reveals no best teaching subject combination.⁷

In presenting implications of his study Hackett stated:

A program of in-service teacher training, workshops, and school visitations should be planned to aid teacher in keeping abreast of developments in industrial arts and to help plan and develop new school shops and programs. Service should be provided in the form of a state consultant for industrial arts who would coordinate and promote the development of industrial arts in the state.

Industrial arts programs should exist in most if not all Georgia secondary schools to help provide a curriculum that is more complete, more up to date, and more cognizant of the interests and needs of the people and the changing nature of the state. These programs should be available to all boys and girls on an elective basis and should provide experiences in woodwork, metalwork, drafting, electricity, home mechanics, auto mechanics, radio, and crafts.⁸

⁷Ibid., pp. 16-50.

⁸Ibid., pp. 148-149.

A study by Hill⁹ to ascertain the status and need for industrial education in Missouri in 1950 was one of the most comprehensive status studies devoted to industrial education. Utilizing a questionnaire and Missouri State Department of Education, Hill concluded that:

1. The groups surveyed overwhelmingly favored the public schools offering industrial education.
2. Industrial arts programs would be increased 37.9 per cent in the years 1950-52.
3. The industrial arts general shop program needed more emphasis in teacher training institutions and in the public schools.¹⁰

Studies Related to Industrial Arts Teacher Supply and Demand

The NEA Research Division presented the findings of the thirteenth annual nationwide survey of teacher supply and demand in a research report, Teacher Supply and Demand in Public Schools, 1960.¹¹ This report predicated a gross shortage in September, 1960, of 135,000 qualified public school teachers. However, there seemed to be a balance between the supply and demand of industrial arts teachers in the nation.

⁹C. R. Hill, "A Study of the Status and Need for Industrial Education in Missouri" (unpublished Doctoral dissertation, University of Missouri, 1950).

¹⁰Ibid.

¹¹Research Division, National Education Association, Teacher Supply and Demand in Public Schools, 1960 (Washington: National Education Association, 1960).

An article by Ray C. Maul,¹² Assistant Director of the Research Division of NEA, dealt specifically with the problem of supply and demand of industrial arts teachers. On a nation-wide basis there seemed to be a balance between the supply and demand of industrial arts teachers in 1950. The calculation which indicated this balance did not take into account either the annual increase in enrollment, or the need for an expanded program of service in the field. Maul emphasized these facts:

1. A teacher shortage is always in a specific location in a specific teaching assignment.

2. A national study can do no more than present a general overview of the total situation--the meaning of these findings must always be interpreted in terms of local conditions.¹³

Studies Related to the Development of Evaluative Criteria for Industrial Arts Teacher Education Programs

One of the principal studies completed in the area of industrial arts teacher education was conducted by Dr. H. L. Helton.¹⁴ This study provided the most complete and comprehensive criteria for industrial arts teacher education

¹²Ray C. Maul, "Are We Producing Enough Industrial Arts Teachers," Industrial Arts and Vocational Education, 49-78, May, 1960.

¹³Ibid., p. 82.

¹⁴H. L. Helton, "Evaluation in Industrial Arts Teacher Education" (unpublished Doctoral dissertation, Wayne State University, 1958).

programs, thus far developed. These criteria were adopted for use in the evaluation of the industrial arts teacher education programs studied in this investigation. A detailed review of Helton's work is presented in Chapter III.

The 1958 Yearbook of the American Council on Industrial Arts Teacher Education is a condensed report of a seven year national study relating to the accreditation of industrial arts teacher education.¹⁵ At the outset, all groups in the nation associated with industrial arts were represented on the original committee for accreditation. The committee was essentially representative of all industrial arts groups, but the project itself was sponsored by the ACIATE, an affiliate of the American Industrial Arts Association.

Some of the early studies which spearheaded the movement toward developing standards and accreditation for the improvement of industrial arts teacher education were reviewed briefly in the 1958 Yearbook of ACIATE. Four of these studies, as reviewed in the Yearbook, were as follows: First, a master's degree thesis was completed in 1913 by Harry H. Whiney at the Colorado Agricultural and Mechanical College. The thesis was a study of entrance requirements, faculty qualifications, shop facilities, general training,

¹⁵Fryklund and Helton, op. cit., pp. 1-18.

curricular standards, distribution of required credits, and major and minor courses in twenty-two teacher training institutions accredited by the North Central Association.

Second, another master's degree study, "A Suggested Plan of Accreditation for Industrial Arts Teacher Education Departments," was completed in 1939 by Elliott C. Hutton at Oregon State College. His study was an attempt to satisfy the need for more uniformity in teacher training for industrial arts teachers. A set of criteria for evaluation was developed with detailed suggestions for application. The study suggested an organizational form for accrediting through National Education Association, the American Industrial Arts Association, and the National Accreditation Association, for institutions offering industrial arts teacher training. Hutton's was the earliest study which was directly related to the problem of accreditation standards for industrial arts teacher education.

Third, a doctoral study, "Teacher Education in Industrial Arts with Special Emphasis on Evaluative Criteria," was completed in 1947 by Dr. Ralph O. Gallington at George Washington University. This study dealt with the appraisal of objectives, professional education, organization, and methodology of programs of teacher education by fifty-two specialists and a check-list study of twenty outstanding teacher education programs.

Fourth, Dr. Bernard Shaw Proctor completed a dissertation, "Accreditation in Industrial Arts Education: A Study to Develop the Purposes, Criteria, Policies, and Procedures for the Accreditation of Industrial Arts Teacher Education Programs for the Baccalaureate" at the Ohio State University in 1953. This study was a valuable source of data pertaining to accreditation standards for industrial arts teacher education.

The aforementioned four studies represented some of the contributions of persons interested in problems of standards, evaluative criteria, and accreditation of industrial arts teacher education. One of the greatest contributions in this area was the 1958 Yearbook of the American Council on Industrial Arts Teacher Education. Standards and criteria for the evaluation of undergraduate industrial arts teacher preparatory programs are presented in this Yearbook. These standards and criteria were a product of a seven year national study conducted under the auspices of ACIATE. A discussion of these standards and criteria is presented in Chapter III.

Studies by Cain¹⁶ and Callan¹⁷ which were concerned

¹⁶C. R. Cain, "An Analysis of the Industrial Arts Teaching Position and Teacher Preparation" (unpublished Doctoral dissertation, Indiana University, 1958).

¹⁷L. J. Callan, "Industrial Arts Teacher Education Programs: A Comparative Analysis and Evaluation of

with industrial arts teacher education, provided some insights into the problems of evaluating teacher education programs. Towers¹⁸ made a similar study, in 1956. Various teacher education programs were analyzed and recommendations for improvement were presented.

Studies Related to the Development of Industrial Arts Teacher Education Programs

A national survey, conducted by Kurth,¹⁹ of 196 industrial arts teacher education programs revealed certain developments and trends which seem significant. Data for Kurth's study were secured by questionnaire from 60 per cent of all institutions in the United States which prepare industrial arts teachers and grant the baccalaureate degree. Developments resulting in effective procedures now used and trends that may affect future industrial arts teacher education were identified. Some of the more significant conclusions included the following:

1. Industrial arts has a place as required or

Selected Teachers and Colleges" (unpublished Doctoral dissertation, The Ohio State University, 1952).

¹⁸E. R. Towers, "Industrial Arts Teacher Education: An Evaluation and Projection of the Undergraduate Program of The Ohio State University" (unpublished Doctoral dissertation, The Ohio State University, 1956).

¹⁹E. L. Kurth, "Certain Developments and Trends in Industrial Arts Teacher Education" (unpublished Doctoral dissertation, The University of Florida, 1955).

elective general education.

2. General education subjects recommended for industrial arts majors and other teacher candidates are similar and include English, Social Science, Mathematics, and Physical Sciences.

3. Present enrollments in industrial arts teacher preparation will not supply future demands for teachers.

4. Industrial arts teachers need to be prepared to teach both unit shops and general shops although general shops are more prevalent in high schools than unit shops.

5. More full time student teaching is being required for teacher candidates.

6. Group dynamics and problem solving on an individual or group basis are modern theories of teaching and learning that can be further utilized and applied in industrial arts.²⁰

In 1956 the department of Industrial Education at the University of Minnesota undertook a project of changing the industrial arts teacher education from what it was then to what they thought it ought to be.²¹ A departmental curriculum committee was appointed to gather data and make recommendations. The research associate assigned to the project was assisted by the curriculum committee. Certain questions were formulated to guide individual, committee, and staff activities. Some of the questions were as

²⁰Ibid.

²¹William J. Micheels and Wesley S. Sommers, The Minnesota Plan for Industrial Arts Teacher Education (Bloomington, Illinois: McKnight and McKnight Publishing Company, 1958).

follows:

1. What assumptions and implications can be made with respect to America and the world in which we will be living? More specifically, what assumptions can be made about the social, economic, and technological forces which will be at work?
2. What assumptions can be made in respect to education, including teacher education?
3. What assumptions can be made in respect to industrial education--both industrial arts and vocational-industrial?
4. How can we characterize the behavior of an industrial education teacher properly prepared to teach in the environment described above?
5. What are the learning experiences this teacher should have during the time he is enrolled in our department?²²

With these and other questions to serve as a guide the staff began its task of changing the program to what it ought to be.

Based upon assumptions about the world in which we live, education, and industrial education, an organizational pattern of industrial arts teacher education was developed. The industrial arts curriculum was grouped into three broad areas: (1) general education, (2) professional education, and (3) industrial arts subject matter preparation. Major attention was given to the latter which was sub-divided into three cores. "They were labeled 'Cores of Experience'

²²Ibid., p. 11.

under the titles: (1) Science-mathematics, (2) Technology (the use of tools and materials), and (3) Design."²³ In this type program provision was made for the student to take professional education courses, general education courses, and specialized industrial arts courses. The student may develop a specialty in one of the cores and also obtain some experience in the other cores.

The Minnesota Plan is not a revolutionary one, but it does provide for progress toward the changes necessary to take industrial arts teacher education from where it is to where it ought to be.

H. ORGANIZATION OF THE STUDY

Chapter I contains an introduction, the statement of the problem, basic assumptions, limitations, definition of terms, and the procedure and sources of data. The chapter also presents a review of related studies and the organization of the study.

Chapter II is composed of three parts. The first part is devoted to a discussion of various procedures employed in the survey of personnel needs for industrial arts programs in South Carolina public high schools. The second part is devoted to analyses of high school principals'

²³Ibid., p. 36.

questionnaires, while the third part presents analyses of industrial arts teachers' questionnaires.

A discussion of the development of standards and criteria for the evaluation of industrial arts teacher education programs is presented in Chapter III.

Chapters IV and V are devoted to reports of an evaluation of the industrial arts teacher education programs at Clemson College and South Carolina State College, respectively.

Chapter VI presents the summary and implications.

CHAPTER II

PERSONNEL NEEDS FOR INDUSTRIAL ARTS PROGRAMS IN SOUTH CAROLINA PUBLIC HIGH SCHOOLS

A. INTRODUCTION

Since the main problem of this study was to evaluate the industrial arts teacher education programs in South Carolina colleges, it seemed necessary to investigate first the personnel needs for industrial arts programs in the high schools. It was felt that information pertaining to those personnel needs would provide insights into the probable teacher education program needs and the implementation of improvements in the program.

The first part of this chapter is devoted to a discussion of the development of questionnaires and the procedures employed in a state-wide survey of personnel needs for industrial arts programs in South Carolina public high schools. The second and third parts are devoted to analyses of the high school principal's questionnaire returns and the industrial arts teacher's questionnaire returns.

B. DEVELOPMENT AND USE OF QUESTIONNAIRES

The questionnaire techniques appeared to be the most practicable means by which the writer could secure data necessary to determine the need for industrial arts teachers

in South Carolina public schools. Lists of questions were developed which, when answered, would provide necessary information about the industrial arts programs and teachers. The questions were studied, grouped, and restated in short answer form. Questionnaires were developed which would collect information from two sources--high school principals and industrial arts teachers. Both questionnaires were examined for content and clarity by the writer's graduate committee, and faculty members in the industrial arts teacher education programs of Clemson College and South Carolina State College. Revisions were made in accordance with the suggestions received. A copy of each questionnaire is presented in the Appendix.

A packet consisting of a letter outlining the purposes of the survey and asking the principal to participate in the survey, a principal's questionnaire, an industrial arts teacher's questionnaire, and a self-addressed, stamped envelope was mailed to each public high school principal in South Carolina. Of the 418 packets mailed, 146, or about 35 per cent, were addressed to principals of Negro high schools. (It was necessary to distinguish between white and Negro schools since South Carolina maintained segregated public schools and colleges.)

Completed questionnaires were coded and data were punched into IBM cards for electronic processing. An IBM

sorter and tabulator were used to provide a tabulation of the data collected by both questionnaires. An analysis of that tabulation is presented in the following sections of this chapter.

C. ANALYSIS OF THE PRINCIPAL'S QUESTIONNAIRE

Two hundred, or approximately 50 per cent, of the 418 high school principals returned completed questionnaires within three weeks from the date of the initial request. A follow-up reminder, mailed to the remaining 50 per cent at the end of the third week, resulted in increasing the over-all return to 64 per cent. The total response was slightly less than 70 per cent of all principals of white high schools and 52 per cent of all principals of Negro high schools. The percentage of returns were somewhat lower than desired, however, the representation in terms of geographic distribution, size of schools, and urban and rural schools seemed adequate. The number and percentage of questionnaire returns by high school principals are presented in Table I.

School Enrollments

An analysis of Table I revealed that 118, or 44 per cent, of the schools that returned questionnaires had an enrollment of less than 400 students. Only 23 per cent of the schools with this enrollment offered courses in

TABLE I

NUMBER OF SOUTH CAROLINA HIGH SCHOOLS IDENTIFIED BY
ENROLLMENT, RACE, AND WITH INDUSTRIAL ARTS PROGRAMS
REPRESENTED IN THIS STUDY, 1960-61

Enrollment	Total number of schools	White schools	Negro schools	White schools with industrial arts programs	Negro schools with industrial arts programs	Total number of schools with industrial arts programs
1 - 199	33	27	6	1	4	5
200 - 399	85	58	27	11	12	23
400 - 599	55	42	13	17	5	22
600 - 799	43	29	14	16	10	26
800 - 999	21	14	7	7	7	14
1000 - 1199	13	9	4	4	4	8
1200 - Up	16	11	5	9	5	14
Total	266	190	76	65	47	112
Percentage of the total number of South Carolina high schools	64	70	52	24	32	27

industrial arts, while 72 per cent of the schools with enrollments of 800 or more offered industrial arts courses. These figures seemed to imply that industrial arts programs were offered more frequently in the larger high schools. The reason for this may be attributed to the notion that schools with an enrollment of 500 or more can offer a better variety of courses and services than can schools with smaller enrollments.

Of the 112 schools in which industrial arts programs were reported, 65 were white and 47 were Negro (Table I). Only 34 per cent of the white respondents reported industrial arts programs, whereas over 60 per cent of the Negro schools reported such activities. It appeared that industrial arts courses were offered more frequently in Negro schools than in white schools in South Carolina.

Enrollment of Industrial Arts Programs

The enrollment of industrial arts programs ranged from 8 students in one school to 590 students in another school. However, 66 per cent of the schools reported industrial arts program enrollments of less than 90 students (Table II). In these schools, the services of only one teacher either full-time or part-time, depending upon the number of students, was required. Slightly more than 75 per cent of the Negro schools fell into this category. The apparent trend of a one-teacher industrial arts program may

TABLE II
SOUTH CAROLINA HIGH SCHOOL INDUSTRIAL ARTS PROGRAMS,
BY ENROLLMENT AND RACE, 1960-61

Students enrolled in industrial arts	Total number of schools	White schools	Negro schools
1 - 29	20	11	9
30 - 59	25	11	14
60 - 89	29	17	12
90 - 119	17	11	6
120 - 149	2	2	-
150 - 179	6	5	1
180 - 209	8	6	2
210 - Up	5	2	3
Total	112	65	47

have significance in planning and developing the industrial arts teacher education curriculum.

Only 22 per cent of all schools reporting industrial arts programs had enrollments between 90 and 150 students, which required two industrial arts teachers. Slightly more than 15 per cent of the Negro industrial arts programs and 28 per cent of the white programs reported enrollments which required two teachers (Table II).

Grades in Which Industrial Arts Courses Are Taught

Generally, industrial arts courses were offered at three different grade levels in the high schools of South Carolina. About 40 per cent of the schools offered industrial arts in the junior high school grade levels and 60 per cent in the senior high school grade levels. From 112 schools reporting industrial arts programs, 72 per cent offered courses at the ninth grade level, 66 per cent at the tenth grade level, and 61 per cent at the eleventh grade level. Only 13 per cent of the schools provided courses at the seventh grade level (Table III). White and Negro schools were comparable in respect to grades in which industrial arts courses were taught.

Eight schools indicated that industrial arts courses were offered at one grade level only. A majority of the schools reported offerings at three different levels, with grades nine through eleven as the most popular combination.

TABLE III

GRADES IN WHICH INDUSTRIAL ARTS COURSES WERE TAUGHT, BY RACE
AND PERCENTAGE OF TOTAL INDUSTRIAL ARTS PROGRAMS AS RE-
PORTED BY 112 HIGH SCHOOLS IN SOUTH CAROLINA, 1960-61

Grade	Number of schools*	Percentage of total industrial arts programs**	White schools	Negro schools
7	15	13.4	9	6
8	42	37.5	23	19
9	81	72.3	46	35
10	74	66.1	40	38
11	69	61.6	40	29
12	65	58.0	39	26

*Number of schools does not total 112 since most schools indicated that industrial arts courses were taught in more than one grade.

**Percentages do not total 100 per cent since most schools indicated that industrial arts courses were taught in more than one grade.

These data may imply that industrial arts teachers should be prepared to teach in both junior and senior high school grade levels.

Industrial Arts Activities Taught

An analysis of the principal's questionnaire revealed that all of the usual industrial arts activities were being taught in the public high schools of South Carolina. The three courses most frequently taught were general shop, woodworking, and drawing. A combination of these three courses was taught in about 85 per cent of the industrial arts programs represented in the survey. Each of the other industrial arts activities listed on the questionnaire was reported as being taught in fewer than eight schools in the state. Table IV contains a list of the industrial arts activities with the number of schools, white and Negro, teaching a first, second, or third year course in each activity.

Second year courses were offered in 54 per cent of the schools which provide a program of industrial arts. The same three courses--woodworking, general shop, and drawing--were reported most frequently as being taught as second year courses. Woodworking was taught in forty-five schools, or slightly more than 40 per cent of the schools reporting industrial arts programs, while drawing was offered in only 26 per cent of the schools (Table IV).

TABLE IV

INDUSTRIAL ARTS ACTIVITIES TAUGHT IN SOUTH CAROLINA PUBLIC HIGH
SCHOOLS, AS REPORTED BY 112 PRINCIPALS, 1960-61

Rank	Activities	Number of schools teaching first year courses			Number of schools teaching second year courses			Number of schools teaching third year courses		
		Total	White	Negro	Total	White	Negro	Total	White	Negro
1.	General Shop	68	38	30	35	18	17	17	7	10
2.	Woodworking	68	38	30	45	22	23	23	12	11
3.	Drawing	63	41	22	30	15	15	8	3	5
4.	Electrical	7	5	2	3	3	-	2	2	-
5.	Plastics	7	2	5	4	2	2	1	-	1
6.	Machine Shop	4	4	-	2	2	-	-	-	-
7.	Automotive	4	3	1	1	-	1	-	-	-
8.	Ceramics	4	4	-	1	1	-	-	-	-
9.	General Metals	3	2	1	2	2	-	1	1	-
10.	Graphic Arts	3	1	2	2	1	1	1	1	-
11.	Textiles	3	3	-	2	2	-	-	-	-
12.	Other	1	-	1	-	-	-	-	-	-

Proportionally, more Negro schools reported second and third year industrial arts courses than did white schools. Slightly more than 58 per cent of the forty-seven Negro schools and 48 per cent of the sixty-five white schools reporting industrial arts programs offered second year courses. Third year courses were reported as being offered in 29 per cent of the Negro and 18 per cent of the white schools. The third year courses most often mentioned were woodworking, general shop, and drawing. Machine shop, automotive, ceramics, and textiles were not reported as being offered the third year (Table IV).

Plans for Industrial Arts Programs

The questionnaire requested that principals give their school's plans for the industrial arts program during the next three to five years. The most frequent response was "to continue with the same program." Fifty of the sixty-five white principals and thirty of the forty-seven Negro principals indicated that they plan to continue with the same program. The number of schools, white and Negro, indicating certain plans for industrial arts programs during the next three to five years is presented in Table V.

Twenty-eight, or 25 per cent of the schools reporting industrial arts courses, planned to expand the program to the extent that at least one additional teacher would be needed in each school during the next three to

TABLE V

PLANS FOR INDUSTRIAL ARTS PROGRAMS DURING NEXT THREE TO FIVE
YEARS, AS REPORTED BY 112 PRINCIPALS OF SOUTH CAROLINA
HIGH SCHOOLS, 1960-61

Rank		Schools Reporting		
		Total	White	Negro
1	Continue with same program	80	50	30
2	Increase the enrollment and employ one additional industrial arts teacher	23	8	15
3	Increase the enrollment and employ two additional industrial arts teachers	5	3	2
4	Plans are uncertain	4	4	-
Total		112	65	47

five years. Assuming that these plans became a reality, there would be a need for about thirty-three industrial arts teachers in these twenty-eight schools. These personnel needs did not include replacements due to the regular teacher turnover.

In responding to the question pertaining to the anticipated need for new industrial arts teachers for the 1961-62 school year, principals indicated the need for fifty-four new teachers, thirty-three teachers for white and twenty-one for Negro schools. These figures include the number of new teachers needed in schools that planned to initiate an industrial arts program or expand the existing program and those needed as replacements. Assuming that the 64 per cent return of the questionnaire was representative of all high schools in South Carolina, there might be a need for more than eighty new industrial arts teachers during the 1961-62 school year.

Schools Which Do Not Offer Industrial Arts

Out of 266 questionnaires returned, 154 indicated that industrial arts courses were not provided. Each principal was requested to give reasons why these courses were not offered. The reasons given were grouped into nine common classifications and are presented in Table VI.

The reasons most frequently given for not providing industrial arts courses was, "We can not obtain a qualified

TABLE VI

REASONS FOR NOT PROVIDING INDUSTRIAL ARTS PROGRAMS, AS
GIVEN BY 154 PRINCIPALS OF SOUTH CAROLINA HIGH
SCHOOLS, 1960-61

Rank	Reasons	Number of principals reporting		
		Total	White	Negro
1	Can not obtain qualified industrial arts teacher	32	30	2
2	The school is too small	28	22	6
3	Financial difficulties	15	10	5
4	Facilities not available	15	10	5
5	Lack of interest and leadership	14	11	3
6	Agricultural shop is satisfying this need	10	5	5
7	Students in this community do not need industrial arts	10	8	2
8	Using the facilities of a nearby school	5	4	1
9	Trade and industrial courses are satisfying this need	4	4	-
10	Reason not given	21	21	-
Total		154	125	29

industrial arts teacher." Of the thirty-two schools giving this response, only two were Negro schools. These figures seemed to indicate a shortage of qualified white industrial arts teachers. The shortage might be due to an insufficient number of college students preparing for this branch of the teaching profession, too few industrial arts teachers accepting positions in South Carolina schools, or industrial arts teachers accepting positions in industry. In an attempt to determine the actual cause of the shortage, the two industrial arts teacher education programs in South Carolina were examined and evaluated. A report of this evaluation is presented in Chapter IV.

Another reason given for not providing industrial arts was, "The school is too small." Almost all of the respondents indicating this reason were principals of schools with an enrollment of less than four hundred students in high school. This seemed to imply that schools with less than four hundred students experienced difficulty in providing industrial arts courses. This implication suggests that it might be desirable to consider increasing each high school enrollment to exceed four hundred students in order to justify an industrial arts program.

Other reasons given for not offering courses in industrial arts were: (1) "financial difficulties," (2) "facilities not available," (3) "lack of interest and

leadership," (4) "agricultural shop is satisfying this need," (5) "using the facilities of a nearby school," and (6) "trade and industrial courses are satisfying this need." Twenty-one principals failed to respond to this part of the questionnaire.

Thirty-four principals indicated that they plan to initiate an industrial arts program in the near future. Twenty-one remarked that they were seeking qualified industrial arts teachers for the 1961-62 school year. References were made also to new school plants being constructed in which industrial arts facilities would be provided. The comments generally reflected an interest in the future of industrial arts programs in South Carolina high schools.

Forty-three schools which did not provide industrial arts courses reported possession of industrial arts facilities and equipment. Twenty-five schools had general shop facilities, nine had woodshops, and four had drawing equipment (Table VII).

Eleven schools which indicated that they provide industrial arts courses, reported facilities and equipment not being used with those courses. A total of fifty-four schools possessed equipment which was not being used. Only thirty of the fifty-four principals responded to the question concerning the reasons why industrial arts facilities and equipment were not used in teaching industrial arts

TABLE VII

UNUSED INDUSTRIAL ARTS FACILITIES IN SOUTH CAROLINA
HIGH SCHOOLS, 1960-61

Facilities	Schools providing industrial arts programs but having unused facilities	Schools with facilities but not providing industrial arts programs
General Shop	1	25
Woodworking	3	9
Drawing	1	4
Automotive	1	1
Ceramics	1	1
Graphic Arts	1	1
Electrical	-	1
General Metals	1	-
Machine Shop	-	1
Plastics	1	-
Textiles	1	-
Total	11	43

courses (Table VIII). The reason reported most frequently was that a "qualified industrial arts teacher was not available." Eight principals indicated that the equipment was being used by either agricultural shops or trade and industrial classes.

Summary of Principal's Questionnaire Results

An analysis of the principal's questionnaire revealed data from which the following generalizations were made:

1. Industrial arts programs were provided by schools with enrollments which exceeded four hundred students.

Schools with less than four hundred students usually experienced difficulty in providing an industrial arts program.

2. Industrial arts programs generally consisted of only one teacher who was responsible for teaching general shop, woodworking, and drawing courses in grades nine through eleven.

3. Of the schools which had industrial arts programs, almost one-half provided a one year course. Generally, courses were not restricted to any single grade level, but were available to students in grades nine through twelve.

4. Schools that had industrial arts planned to continue with about the same type program during the next three to five years. However, indications were that about fifty new industrial arts teachers would be needed for the 1961-62 school year.

TABLE VIII

REASONS FOR NOT USING INDUSTRIAL ARTS EQUIPMENT WHICH
SCHOOLS POSSESS, AS GIVEN BY PRINCIPALS OF SOUTH
CAROLINA HIGH SCHOOLS, 1960-61

Rank	Reasons	Number of principals reporting
1	Qualified industrial arts teacher not available	15
2	Using this equipment with agricultural shops	4
3	Using this equipment with trade and industrial classes	4
4	Discontinued industrial arts because of financial difficulties	3
5	Lack of interest by students	3
6	Inadequate space for shop	1
7	Reason not given	24
Total		54

5. About 60 per cent of the high schools in South Carolina did not provide industrial arts courses because the schools were too small or qualified industrial arts teachers could not be obtained. The expressed difficulty in obtaining qualified industrial arts teachers might be an indication of a shortage of teachers in this field.

6. A majority of the high schools with enrollments of four hundred or above who did not provide industrial arts would initiate a program if a qualified industrial arts teacher were available.

7. One out of every five high schools in South Carolina had industrial arts facilities which were not being used.

D. ANALYSIS OF THE TEACHER'S QUESTIONNAIRE

The purpose of the teacher's questionnaire was to gather information about the educational preparation and teaching responsibilities of industrial arts teachers in South Carolina high schools. Also, an attempt was made to identify the colleges from which these teachers came. This section presents a discussion of analyses of the teacher's questionnaires.

Copies of the questionnaire for industrial arts teachers were included with the letter to high school principals. These principals were instructed to pass the

teacher's questionnaire on to their industrial arts teachers for completion. Teacher's questionnaires were received from 98 of the 112 schools which offer industrial arts courses. A total of 109 teachers returned the questionnaire in usable form.

Educational Preparation of Industrial Arts Teachers

Out of 109 teachers who returned questionnaires, seven (six white and one Negro) did not have a college degree (Table IX). Eighty-one teachers had bachelor's degrees, twenty had master's degrees, and one had a doctor's degree.

More than 71 per cent of all respondents majored in either industrial arts or industrial education. Negro teachers appeared to be better prepared to teach industrial arts than white teachers, since 90 per cent of the Negroes had majored in either industrial arts or industrial education, whereas, only 64 per cent of the whites majored in those courses. Master's degrees were held by 24 per cent of the Negro teachers, and by only 13 per cent of the white teachers.

Slightly more than 73 per cent of the industrial arts teachers received bachelor's degrees from Clemson College and South Carolina State College, while only 13 per cent received degrees from institutions outside the state. Most of the teachers who received degrees from other

TABLE IX

EDUCATIONAL PREPARATION OF SOUTH CAROLINA HIGH SCHOOL INDUSTRIAL ARTS TEACHERS
WHO RETURNED QUESTIONNAIRES, 1960-61

Degree	Number of teachers			Number with major in industrial arts			Number with major in industrial education			Number with majors other than industrial arts or industrial education		
	T.*	White	Negro	T.	White	Negro	T.	White	Negro	T.	White	Negro
None	7	6	1	-	-	-	-	-	-	-	-	-
At least B.S.	102	53	49	27	12	15	51	22	29	24	19	5
At least M.S.	21	9	12	-	-	-	4	2	2	17**	7	10
Ed.D.	1	1	-	-	-	-	-	-	-	1	1	-
Total number re- porting	109	59	50	27	12	15	51	22	29	24	19	5

*T. - Total

**This figure includes ten teachers who earned B.S. degrees in either industrial arts or industrial education.

colleges in the state majored in education, engineering, or science. Agricultural education was listed as a major course by eight teachers, most of whom were graduates of Clemson and State College. It seemed evident that industrial arts programs in South Carolina high schools were dependent upon Clemson College and State College for prospective industrial arts teachers. A list of the institutions from which industrial arts teachers received college degrees is presented in Table X.

The industrial arts teacher, as required by the Teacher Education and Certification Division of the South Carolina State Department of Education, must have (1) a minimum of three semester hours in each of four or more shop activities, (2) a minimum of four semester hours in courses of related drawing and design in at least two different courses, and (3) eight semester hours of elective courses in the usual industrial arts subject matter activities. Responses to questions pertaining to industrial arts subject matter courses taken in college indicated that twenty-nine of the 109 teachers who returned questionnaires did not have all of these required courses. Although twenty-nine of the respondents did not meet minimum requirements for certification, more than one-half of them had taken as many as fifteen semester hours of the twenty-four hours required.

TABLE X

INSTITUTIONS FROM WHICH SOUTH CAROLINA HIGH SCHOOL
INDUSTRIAL ARTS TEACHERS RECEIVED COLLEGE DEGREES

School	Number with B.S. degree	Number with M.S. degree	Number with Ed.D. degree
Clemson College	40	1	-
South Carolina State College	40	10	-
University of South Carolina	1	3	1
The Citadel	1	-	-
Privately supported institutions in South Carolina (whites only)	4	3	-
Privately supported institutions in South Carolina (Negroes only)	2	-	-
Institutions in other states	14	4	-
Total	102	21	1

In an attempt to determine the extent to which industrial arts teachers were seeking professional improvement, they were asked the question: "Are you working toward a higher college degree?" More than 54 per cent of the teachers indicated that they were not working toward a higher degree. However, eleven teachers, or 10 per cent, stated that they were taking courses for professional and technical improvement. This seemed to indicate that nearly one-half of the industrial arts teachers in South Carolina high schools were not systematically attempting to improve themselves professionally.

Teaching Experience

In an attempt to group teachers according to teaching experience each was asked to give the number of years he had taught (1) industrial arts, (2) industrial arts in South Carolina, (3) industrial arts in present school, and (4) in public schools. Respondents were grouped into five classifications beginning with those who had less than five years of experience, then those who had between five and ten years, and finally those who had experience that fell into each ten-year bracket above ten years. A tabulation of the teaching experience of industrial arts teachers in South Carolina is presented in Table XI.

Forty-four teachers, or 43 per cent of the respondents, had less than five years of industrial arts teaching

TABLE XI
YEARS OF TEACHING EXPERIENCE OF SOUTH CAROLINA HIGH SCHOOL
INDUSTRIAL ARTS TEACHERS, 1960-61

Teaching experi- ence in	Years				
	0-4	5-9	10-19	20-29	30-Up
Industrial Arts	44	32	28	4	1
Industrial Arts in South Carolina Schools	47	33	24	4	1
Industrial Arts in Present School	53	35	19	2	-
Public Schools	41	27	32	8	1

experience, while only five teachers had taught industrial arts more than twenty years. Industrial arts teachers as a group had an average of about eight years of industrial arts teaching experience. However, the average teaching experience in public schools was nine years and experience in the present school was about six years. This was an indication that teachers had an average of three years of teaching experience in schools other than the one in which they were presently teaching.

Subject Areas Taught

Industrial arts teachers in South Carolina public high schools generally taught three different subject matter courses--woodworking, drawing and general shop. About 62 per cent of the teachers were teaching a combination of the three courses. Woodworking, reported most frequently, was taught by 72 per cent of the teachers. In several cases one teacher taught as many as five subject matter areas, but the average was between two and three subject areas. Drawing, ranked as the second most frequently taught subject, was reported as being taught by 68 per cent of the white teachers and 50 per cent of the Negro teachers. This was one of the greatest differences between white and Negro teachers in respect to subject areas taught. Another difference was in the teaching of general shop. Only 50 per cent of the Negro teachers and about 54 per

cent of the white teachers taught general shop. Table XII lists the subject areas taught and the number of teachers, white and Negro, teaching each subject.

Some of the subject areas in which four teachers or less were teaching were ceramics, machine shop, automotive, textiles, and graphic arts (Table XII). Questionnaires disclosed that there were no Negro industrial arts teachers teaching ceramics, machine shop, textiles, and graphic arts. One Negro was teaching masonry as an industrial arts subject, but this course was not taught by white industrial arts teachers.

Teaching Combinations

Industrial arts teachers were requested to give their complete weekly class schedule, listing the subjects taught and the number of students in each class. An analysis of this part of the 109 questionnaires returned indicated that there were fifty-nine full-time industrial arts teachers. There were fifty teachers who had responsibilities in one or more courses other than industrial arts. A tabulation of the teaching combinations is presented in Table XIII.

Thirty-three industrial arts teachers had only one other teaching responsibility, and seventeen teachers had two or more additional teaching areas. The most frequent teaching combination, reported by 23 per cent of the

TABLE XII

INDUSTRIAL ARTS SUBJECT AREAS TAUGHT AS REPORTED BY 109 SOUTH
CAROLINA HIGH SCHOOL INDUSTRIAL ARTS TEACHERS, 1960-61

Rank	Subject area	Number of teachers		
		Total	White	Negro
1	Woodworking	79	43	36
2	Drawing	65	40	25
3	General Shop	60	32	28
4	Electrical	12	5	7
5	Plastics	11	4	7
6	General Metals	7	4	3
7	Ceramics	4	4	-
8	Machine Shop	3	3	-
9	Automotive	3	2	1
10	Textiles	2	2	-
11	Graphic Arts	1	1	-
12	Other	1	-	1

TABLE XIII

TEACHING COMBINATIONS OF 109 SOUTH CAROLINA HIGH SCHOOL
INDUSTRIAL ARTS TEACHERS, 1960-61

Industrial arts teachers:	Number of teachers		
	Total	White	Negro
Full-time	59	35	24
With only one other teaching area	33	16	17
With two or more other teaching areas	17	8	9
Teaching trade and industrial education and diversified occupations	26	12	14
Teaching mathematics	13	7	6
Teaching science	5	2	3
Teaching history	4	-	4
Teaching English	1	-	1
Teaching physical education	1	1	-
Teaching agriculture	1	1	-
Teaching other courses	16	9	7

teachers, was industrial arts and trade and industrial education (including diversified occupations). This finding was not surprising since 46 per cent of the teachers majored in industrial education, and 73 per cent received their college degrees from Clemson College and South Carolina State College where multi-purpose programs of industrial teacher education were offered.

Another teaching combination, held by 12 per cent of the teachers reporting, was industrial arts and mathematics. Only one teacher had each of the following combinations: industrial arts and English, industrial arts and physical education, and industrial arts and agriculture. Sixteen industrial arts teachers reported other teaching responsibilities but failed to list specific courses or duties.

The average industrial arts teaching load was calculated from data given in the teaching schedule. There were 420 periods of industrial arts taught by 109 teachers, giving an average of 3.8 classes per teacher per day. The total number of industrial arts students represented in the survey was 8200, which averaged seventy-five students per teacher and twenty students per class. White and Negro teachers had the same average number of students.

Summary of Teacher's Questionnaire

An analysis of the teacher's questionnaire revealed information from which the following generalizations were

made:

1. All industrial arts teachers, except seven, in the public high schools of South Carolina answering the questionnaire had at least B. S. degrees, of which about three-fourths were in industrial arts or industrial education.

2. Negro industrial arts teachers appeared to be prepared, in terms of college degrees, more adequately than did white industrial arts teachers.

3. Almost three-fourths of the 109 industrial arts teachers who returned questionnaires were graduates of Clemson College and South Carolina State College. Slightly more than one-eighth of the 109 teachers received college degrees from institutions outside South Carolina, and slightly less than one-eighth received degrees from private and public colleges, other than Clemson and State College, within the state. This seemed to indicate that the public schools of South Carolina were dependent upon the in-state institutions for prospective industrial arts teachers.

4. About one-fourth of the high school industrial arts teachers failed to meet the state minimum requirements for certification as industrial arts teachers.

5. Since almost one-half of the high school industrial arts teachers were not actively engaged in courses for professional improvement, there may be a need to

organize area or regional extension or evening classes in industrial arts subjects. This should be a function of the industrial arts teacher education programs in cooperation with the State Department of Education.

6. Generally, woodworking, drawing, and general shop were the industrial arts subject areas taught in South Carolina schools. Woodworking courses appeared to be over-emphasized, while basic electricity, plastics, ceramics, general metals, machine shop, automotive, textiles, and graphic arts courses appeared to be under-emphasized.

7. About one-half of the industrial arts teachers in South Carolina were devoting full-time to industrial arts, and one-fourth were teaching vocational subjects in addition to industrial arts. Other teaching combinations did not appear to be significant.

E. SUMMARY

Results of the state-wide survey of personnel needs for high school industrial arts programs in South Carolina were presented in this chapter. The first part of this chapter was devoted to a brief discussion of the development of questionnaires used in the survey, and the second and third parts were devoted to a discussion of questionnaire returns from high school principals and industrial arts teachers in South Carolina.

Some of the major implications drawn from an analysis of the survey findings are as follows:

1. Since almost one-half of the high schools in South Carolina had enrollments which were considered too small (less than four hundred students) to justify the expenditure necessary to provide an adequate program of industrial arts, it seemed desirable that state and local educational administrators should develop ways and means by which an adequate program could be provided for all pupils in these small schools. In some instances this might be accomplished by school consolidation, and in other cases it may be possible for two neighboring schools to share industrial arts teachers and facilities. In order to provide an adequate program, schools may be required to employ at least two qualified industrial arts teachers and furnish general shop facilities for about six or more industrial arts activities. Obtaining qualified industrial arts teachers may be the most difficult task in providing an adequate program of industrial arts.

2. Generally, high school students (in schools which had an industrial arts program) in grades nine through twelve were permitted to take industrial arts courses on an elective basis, which seemed to imply that industrial arts teachers were teaching classes which contain students of both junior and senior high school grade levels. This may

have implications for the industrial arts teacher education programs in the state colleges since it is their responsibility to prepare prospective teachers for public school industrial arts programs.

3. Indications were that most high school principals in South Carolina were interested in providing an adequate program of industrial arts in their schools. In order to stimulate this interest and to make progress toward achieving the objectives of American education, there seems to be a need for a state-wide coordinator of industrial arts. This person, if given the opportunity, might provide the supervision and coordination necessary to develop the type of state-wide industrial arts program required to meet the needs of high school students in South Carolina.

4. It seemed evident that South Carolina colleges were not graduating a sufficient number of qualified industrial arts teachers. Clemson College and South Carolina State College, being the only institutions in the state which provide industrial arts teacher education programs, probably should make every effort to meet these personnel needs in terms of quality as well as quantity.

What constitutes an adequate industrial arts teacher education program, and the adequacy of the programs at Clemson College and South Carolina State College provides the focus of Chapters III, IV, and V, respectively.

CHAPTER III

THE DEVELOPMENT OF STANDARDS AND CRITERIA

A. INTRODUCTION

The purpose of this chapter is to describe the development of standards and evaluative criteria for the accreditation of industrial arts teacher education. The first portion of this chapter, devoted to a brief review of the history of the movement to prepare standards for accreditation, will be followed by a discussion of a national survey related to the accreditation of industrial arts teacher education which was conducted by the American Council on Industrial Arts Education. Also, the accreditation standards which were developed by this national organization are presented in this chapter.

B. ACCREDITATION OF INDUSTRIAL ARTS TEACHER EDUCATION

Some of the most significant advances in the development of standards for upgrading industrial arts teacher education programs have evolved from the efforts of regional, national, and professional accrediting agencies. The regional and national agencies sought to improve higher education by use of standards pertaining to an institution as a whole. However, the movement in accreditation developed in the direction of departmental accreditation in the

professional fields. This movement led to the incipience of the American Council on Industrial Arts Teacher Education (ACIATE).

The first national effort for the accreditation of industrial arts teacher education began in 1950. At that time the American Association of Colleges for Teacher Education (AACTE) made provisions to accept departmental accreditation on a permissive basis. Because the AACTE was a national agency with authority for accreditation of teacher education, opportunity was present for developing a co-operative plan for accreditation of industrial arts teacher education on a national basis. Officers of several industrial arts professional organizations were consulted and action was taken to appoint a committee to represent the following industrial arts associations: the Industrial Arts Section, American Vocational Association; the American Industrial Arts Association; the National Association of Industrial Arts Teacher Trainers; the Industrial Arts Conference of the Mississippi Valley; and the American Council on Industrial Arts Teacher Education. The committee also consisted of representatives from the American Association of Colleges for Teacher Education and the United States Office of Education. It was the goal of this committee to develop a program for the accreditation of industrial arts teacher education. They outlined the procedures for

developing standards for the accreditation of industrial arts teacher education as follows: to study the problem at the doctoral level; to prepare a tentative schedule for standards; to submit these standards to the industrial arts accrediting committee for revisions; and to submit the tentative standards to directors of industrial arts teacher education programs for approval.¹

The accreditation committee prepared tentative standards for the accreditation of industrial arts teacher education which were submitted to directors of industrial arts teacher education programs. On the basis of criticisms by these directors and in terms of avoiding the duplication of the AACTE standards for teacher education, revisions were made in the schedule of standards. The first application of these standards took place in 1953 when the AACTE was invited to study the College of Education of Wayne University.²

Between 1954 and 1956 the discontinuance of the accreditation function of the AACTE and the recognition of the National Council for Accreditation of Teacher Education

¹Verne C. Fryklund and H. L. Helton, The Accreditation of Industrial Arts Teacher Education, Seventh Yearbook of the American Council on Industrial Arts Teacher Education (Bloomington, Illinois: McKnight & McKnight Publishing Company, 1958), pp. 6-14.

²Ibid., pp. 15-16.

(NCATE) as the national accrediting agency for teacher education resulted in the change of personnel authorized to prepare standards for the accreditation of industrial arts teacher education. The NCATE requested that the American Council on Industrial Arts Teacher Education appoint an accreditation committee. This committee, the National Committee on Accreditation of Industrial Arts Teacher Education Programs, accepted the pioneer work of the first accrediting committee as the major source of standards and criteria available and continued studying the problem under a reorganized plan.³

In November 1955, H. L. Helton was appointed secretary of the National Committee on Accreditation of Industrial Arts Teacher Education Programs and accepted the assignment to direct the research necessary to develop an evaluative instrument that would be of value in upgrading programs of industrial arts teacher education. The research included a national survey involving the departmental chairmen of all institutions having industrial arts teacher education programs.⁴

³Ibid., p. 17.

⁴Ibid., p. 18.

C. NATIONAL SURVEY

A study conducted by H. L. Helton,⁵ secretary of the National Committee on Accreditation of Industrial Arts Teacher Education Programs, included a national survey of 202 institutions having industrial arts teacher education programs. His statement of the problem was:

The purpose of this study was to develop an evaluative instrument consisting of standards and criteria for the accreditation of undergraduate industrial arts teacher education programs. As early as 1950 national agencies concerned with accreditation of teacher education had expressed a need for such materials to facilitate their accrediting activities. When the National Council for Accreditation of Teacher Education assumed accrediting responsibilities from the American Association of Colleges for Teacher Education, the industrial arts profession was asked to prepare and send to the National Council for Accreditation of Teacher Education an evaluative instrument for industrial arts teacher education.

In addition, standards and criteria for undergraduate industrial arts teacher education were desired by members of the industrial arts teacher education profession to provide a basis for study and appraisal of their industrial arts programs. To produce an instrument to meet these needs was the significant objective of the research.⁶

Through review of literature pertinent to industrial arts, an opinionnaire was developed for use in the national survey of industrial arts teacher education. This instrument,

⁵H. L. Helton, "Evaluation in Industrial Arts Teacher Education" (unpublished Doctoral dissertation, Wayne State University, 1958).

⁶Ibid., p. 3.

mailed to each industrial arts department chairman, was designed to obtain a reaction to each of 147 statements that characterized industrial arts teacher education. The department chairmen were asked to react to each item as a basis for accreditation of such departments and rate the item as either essential, desirable, acceptable, undesirable, or detrimental.

Of the 202 instruments mailed, 166 were returned in usable form. The usable returns represented 82 per cent of the institutions in forty-five states that reported programs of industrial arts teacher education.

The usable questionnaires were analyzed to identify the important statements. Items were rated important if checked either "essential" or "desirable" by at least 75 per cent of the respondents. Eighty-seven items were classified as important to use as a basis for the accreditation of industrial arts teacher education programs. These eighty-seven items were used in the formulation of sixty-seven standards which were classified into major areas according to the six areas recognized by the National Council for Accreditation of Teacher Education.

D. STANDARDS FOR ACCREDITATION

After the important items in the national survey opinionnaire were identified, standards were formulated and

grouped into six major areas of industrial arts teacher education. These areas were: (1) organization and administration, (2) the student personnel program, (3) the faculty, (4) the curriculum, (5) student teaching, and (6) facilities and laboratories.

Organization and Administration

From thirty-nine statements which appear in the literature describing the organization and administration of departments of industrial arts teacher education, twenty were rated essential or desirable as a basis for accreditation of such departments. Characteristics included in the twenty items were studied, grouped, and re-written as eight standards:

Organization and Administration - Area I

1. Each department should show evidence of organization and administration sufficient to prepare industrial arts teachers needed in the service area, and also to provide for the general educational needs of these prospective teachers.

2. Departments should be free to develop learning experiences, in cooperation with other departments when necessary, and with state officials and curriculum committees, so they can effectively prepare graduates who are certifiable, competent, and professional in industrial arts education.

3. Each member of the full-time staff should participate in the professional activities of the department, the college, and the state. Full-time members of the department should attend the meetings of their professional industrial arts organization.

4. The program should have a full-time staff. The enrollment should be such that all students can

be adequately taught without danger of lowering standards. There should be thorough instruction and a variety of experiences. At least three full-time staff members are recommended. The program and staff should be able to demonstrate that industrial arts contributes to the general education of all youth.

5. All departmental staff members should participate in administrative decisions which affect the quality of the departmental program.

6. Each staff member should be allowed time and be encouraged to visit and study public schools in the service area and nearby colleges and universities.

7. Each staff member should be provided with sufficient clerical help and time to facilitate course planning, preparation of instructional materials, and the meeting of necessary correspondence obligations.

8. The department should maintain at least both a limited general shop such as general metalworking or general woodworking and a comprehensive general shop in which several different industrial arts activities, with variety of materials, are offered simultaneously under the direction of one instructor.⁷

Student Personnel Program

The second area of the opinionnaire was concerned with the student personnel program and contained fourteen statements, all of which were rated important to efficient departments. These fourteen items were grouped and rewritten as twelve standards:

⁷Fryklund and Helton, op. cit., p. 25.

Student Personnel Program - Area II

1. The department should take active part in an effectively functioning recruitment and orientation program designed for "non-teacher education" college students as well as for capable graduates from secondary schools.

2. Departments should show evidence of careful selection of students for the industrial arts teacher education curriculum. Admission to the institution should not be the sole consideration for admission to industrial arts teacher education; personal interviews with staff members of the department to determine interests and aptitudes should be considered essential. Adequate records and test results must be available to departmental counselors.

3. The departmental staff should cooperate with the institutional counseling service personnel in assisting industrial arts majors with personal and curricular problems.

4. Industrial arts student clubs and organizations designed to stimulate professional growth should be encouraged and supported by the department.

5. There should be evidence that students are encouraged to assume responsibility for departmental activities such as maintaining bulletin boards, libraries, and instructional aids. Whenever it seems appropriate, students should participate in evaluation of departmental courses and activities.

6. There should be an effective program for releasing news and information to students and graduates.

7. Provisions should be made for student use of typing and duplicating equipment needed in the production of instructional materials and class reports or assignments.

8. The department should maintain an individual file of cumulative information about each student classified as a major.

9. The department should coordinate placement activities with the college placement office.

10. Whenever possible, graduates of the department should be visited during their first year on the job.

11. There should be periodic follow-up studies of the departmental graduates.

12. Adequate provisions should be made for continual evaluation of each student accepted as a major to facilitate the selective retention of favorable candidates for teaching positions.⁸

The Faculty

Eight of the eleven statements which characterized the faculty of industrial arts teacher education programs were rated important. These eight items were used as a basis for the following six standards:

The Faculty - Area III

1. Each member of the industrial arts staff should have at least a master's degree in education with a specialty in industrial arts or industrial education. Members of the administrative staff and those teaching professional courses for industrial arts teachers should have an earned doctor's degree.

2. The teaching staff should be selected on the basis of demonstrated competency in teaching industrial arts in secondary schools. It is desirable that each member have a background of successful work experience in the area of his teaching specialty.

3. Teaching loads of the faculty should be adjusted to compensate for required student contact hours in shop or laboratory courses.

4. Provisions should be made and observed for

⁸Ibid., p. 26.

necessary non-teaching responsibilities.

5. Industrial arts teachers who have demonstrated high degrees of competency in secondary school teaching and meet required college standards should be invited to serve as special instructors whenever possible.

6. Student assistants and graduate fellows teaching shop courses for industrial arts majors should possess a bachelor's degree and public school teaching experience in industrial arts.⁹

The Curriculum

The fourth area of the opinionnaire was concerned with the curriculum for prospective industrial arts teachers. From thirty-three statements pertaining to the curriculum of industrial arts teacher education the following eight standards were formulated:

The Curriculum - Area IV

1. Teaching fields for industrial arts teachers must provide for a wide variety of courses developing several industrial arts skills.

2. Adequate emphasis should be placed on the teaching of design, appropriate use of materials, function, and quality of workmanship.

3. A minimum of thirty semester hours should be required for a major in industrial arts.

4. A minimum of ten semester hours should be required for specialization in one of the usual areas of industrial arts.

5. Curriculum activities should provide for experiences that lead to an understanding of good

⁹Ibid., p. 27.

guidance principles.

6. The curriculum should provide for student experiences with group projects as well as with individual projects.

7. Industrial arts students who are clearly competent, through industrial work experiences or similar activities, in one of the usual industrial arts areas, should have their programs adjusted.

8. Students should be involved in experiences which result in understanding good guidance practices as related to industrial arts.¹⁰

Student Teaching

Eighteen of the twenty-five statements pertaining to student teaching were rated essential or desirable as a basis for accreditation of industrial arts teacher preparatory programs. From these eighteen items the following ten standards were developed:

Student Teaching - Area V

1. Student teaching experiences should begin during the junior or senior year, and should be preceded by observation of teaching practices in public schools.

2. Student teaching should be done under the direction of a critic who possesses at least a master's degree and successful industrial arts teaching experience.

3. All student teaching should be done in an accredited public school within the state.

4. The department should select or approve the critic teacher as well as the school in which the student teaching is done.

¹⁰Ibid., p. 28.

5. Whenever possible, student teachers should work with both junior and senior high school classes.
6. Whenever possible, student teaching should be done in different subjects, such as drafting and woodworking, and should provide for experiences with the general shop type of organization.
7. The department should have written criteria for use in assigning students the student teaching sequences.
8. The student teacher should participate in all of the activities expected of a fully qualified industrial arts teacher, including planning evaluation, maintenance, and extra-curricular activities.
9. The student teacher in industrial arts should be an industrial arts major.
10. Student teachers should participate in the evaluation of their own performance.¹¹

Facilities and Laboratories

All twenty-three of the statements concerning facilities and laboratories were rated important and used as a basis for the following standards:

Facilities and Laboratories - Area VI

1. There should be office space for each staff member.
2. There should be a departmental library of curriculum materials available for student use.
3. Library materials should be adequate and current for all areas of instruction offered by the department.
4. Appropriate film strips, models, charts,

¹¹Ibid., p. 29.

and other teaching aids should be available for classroom use.

5. Emergency instructional supplies should be readily available through requisition.

6. Use of new materials, machines, and processes should be evident in the shop.

7. Adequate records should be maintained for all supplies purchased.

8. Each machine should be in good working order and equipped with adequate safety devices, such as guards and safety switches.

9. Shops should be attractively painted and safety zones should be identified.

10. First aid kits should be available in each shop.

11. Equipment and facilities should be inspected to insure safe use.

12. The department should be clearly identified by reason of having offices, classrooms, and shops on the college campus.

13. Shops and classrooms should be arranged and lighted appropriately for the courses being taught.

14. Each shop should have a minimum of two exits.

15. Washing facilities and drinking fountains should be provided in convenient locations.

16. Display cases should be maintained by instructors or students in the department.

17. There should be safe and adequate storage facilities for all supplies, projects, and tools.

18. There should be student lockers for each shop where such facilities are needed.

19. A finishing room should be maintained for each shop in which the nature of the work requires it.

20. Ample instruction and planning area should be provided for each shop or classroom.

21. Each shop should have adequate quantities and varieties of tools, supplies, and equipment.

22. There should be evidence of good judgment in requests for tools, equipment, and supplies.

23. Necessary utilities such as electricity, water, compressed air, and gas should be available in accordance with the needs in the activities under instruction in the shops.¹²

E. EVALUATIVE CRITERIA FOR ACCREDITATION

The techniques which could be used to determine the extent to which programs of industrial arts teacher education meet the established standards for accreditation was of major concern to the National Committee on Accreditation of Industrial Arts Teacher Education Programs. One method, commonly used, is to require the institution being accredited to furnish descriptive information about the program. Using this method as a guide, a two-part instrument was developed which could be used for the collection of descriptive information and the evaluation of the program. A copy of that instrument is presented in the Appendix.

The first part of the instrument contains questions, designed to secure descriptive information about the program, which relates to each standard used in accrediting

¹²Ibid., pp. 30-31.

the teacher education program. Answers to these questions furnish data necessary for the rater to evaluate the program in terms of the established standards.

The second part of the instrument contains a ten-point evaluative rating scale which was designed to be used after descriptive information had been compiled and analyzed. The rater indicates his estimate of how well the program meets the prescribed standards by assigning a numerical value of between zero and ten to each question pertaining to the program. The rating scale is as follows:

Evaluation Rating Scale

- | | |
|------|--|
| 0 | Items not present in this department, does not apply |
| 1- 2 | All or nearly all aspects unsatisfactory |
| 3- 4 | More aspects unsatisfactory than satisfactory |
| 5- 6 | More aspects satisfactory than unsatisfactory |
| 7- 8 | Most aspects satisfactory |
| 9-10 | Nearly all or all aspects satisfactory ¹³ |

F. SUMMARY

The purpose of this chapter was to describe the development of accreditation standards and evaluative criteria for industrial arts teacher education. The standards are presented in this chapter and the evaluative criteria are presented in the Appendix.

The standards and evaluative criteria were developed by the National Committee on Accreditation of Industrial

¹³Ibid., p. 37.

Arts Teacher Education Programs to be used for accreditation and as an instrument for self-improvement of industrial arts teacher education programs. This instrument has been accepted to be used in conjunction with the general standards of the National Council for Accreditation of Teacher Education.

Because these standards and evaluative criteria were developed by a national professional organization and accepted by other national organizations concerned with the accreditation of industrial arts teacher education programs, it seemed appropriate that they be employed in evaluating industrial arts teacher education programs in South Carolina colleges. Chapters IV and V will be devoted to reporting the findings of an evaluation of those programs.

CHAPTER IV

EVALUATION OF INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM AT CLEMSON COLLEGE

A. INTRODUCTION

Standards and criteria identified in the previous chapter were used to evaluate the industrial arts teacher education programs in South Carolina colleges. The purpose of this chapter is to report the findings of the evaluation in Clemson College, one of two institutions having programs of industrial arts teacher education. A brief discussion of the historical background of the institution, methods and procedures used in the evaluation, rating results, and areas of adequacy and inadequacy in the program are included in this report.

B. CLEMSON COLLEGE

The General Assembly of South Carolina, using the Morrill Land-Grant Act of 1862 as a legal basis, accepted the bequest of Thomas G. Clemson which set aside the greater part of the Clemson estate for the founding of a scientific and technical college. Clemson College, which was established in 1889, officially opened in 1893 with 446 students. The enrollment increased over the years to the record peak

of four thousand students in 1960.¹

Clemson College provided twenty-nine curricula under the Schools of Agriculture, Architecture, Arts and Sciences, Engineering, and Textiles. Industrial education, the curriculum under which the industrial arts teacher education program was provided, was administered by the School of Arts and Sciences.

Industrial education was one of two curricula offered by the Department of Secondary Education. The curriculum was designed to prepare students to teach industrial arts and trade and industrial education subjects. The other curriculum, secondary education, was designed to prepare teachers in general high school subjects, with emphasis upon the teaching of mathematics, science, history, and English.

During the 1949-50 school term there were seventy-five students reported as industrial education majors. Five years later, 1954-55, the enrollment in this curriculum decreased to forty-eight students. During the 1959-60 school term thirty students were reported as industrial education majors, three seniors, six juniors, eleven sophomores, and ten freshmen. Trends during the past ten years reveal a steadily decreasing enrollment, which, if allowed to continue,

¹Clemson College Record, catalogue vol. XXXV (May, 1960), 83-85.

will probably force the college to discontinue the industrial education program. Some of the likely reasons for this decrease were revealed by the evaluation of the industrial arts teacher education program.

Methods and Procedures Used in the Evaluation

With the permission of the head of the Department of Secondary Education and the cooperation of the professor in charge of the industrial education curriculum, arrangements were made to evaluate the industrial arts teacher education program at Clemson College. The standards and criteria which were used in the evaluation are presented in Chapter III and the Appendix, respectively.

The evaluative instrument was administered by four members of the Clemson faculty who had industrial arts teaching responsibilities. The professor in charge of the industrial education curriculum was the only faculty member who devoted full-time to industrial education; the other three were members of the industrial engineering staff.

During an interview with the professor in charge of industrial education, the evaluative instrument was discussed and directions were given for its use. Similar instructions were given to the other raters. A comparison of the four ratings revealed that raters were in general agreement on most of the areas being evaluated. A composite of the four ratings was made to evaluate more fully

the industrial arts teacher education program at Clemson College. In instances where one person gave a rating of at least two units above or below the other raters, the writer accepted the responsibility of adjusting the composite rating to comply with the descriptive information available.

Evaluation Findings

The composite rating is discussed briefly under the six major areas: organization and administration, the student personnel program, the faculty, the curriculum, student teaching, and facilities and laboratories. The ten point progressive scale used in answering questions involving evaluative judgment about facets of the industrial arts teacher education program appears on each table concerning the area of evaluation.

Organization and administration--Area I. In responding to eleven questions pertaining to the organization and administration of the industrial arts teacher education program, raters indicated that more aspects were unsatisfactory than satisfactory. Ratings for Area I in the evaluation of industrial arts teacher education program at Clemson College are presented in Table XIV.

Although the over-all rating for Area I was unsatisfactory (4.1), four items were rated seven or above. These high ratings were considered as strengths in the organization

TABLE XIV

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE ORGANIZATION AND ADMINISTRATION OF
THEIR INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How successful is the department in establishing its purpose in terms of service area needs?	4
2.	How adequate is the improvement in:	
	a. Variety of courses offered?	8
	b. Departmental organization?	3
	c. Departmental administration?	3
3.	How successful is the department in:	
	a. Meeting needs of the service area?	3
	b. Offering special courses?	4
	c. Maintaining admission standards?	6
4.	How alert is the department to the need for new courses?	4
5.	How effectively has the department planned for future development of the program?	4
6.	How satisfactorily has the department kept informed with new developments in industrial arts teacher education?	4
7.	How adequate is the secretarial help for the department?	7
8.	How satisfactory are provisions for visiting other schools?	8
9.	How adequate is the time reserved for staff planning and/or research?	4
10.	How effectively does the departmental staff function?	3

TABLE XIV (continued)

Item	Question	Rating
11.	How adequate is the department budget?	7
Average rating for area		4.1

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

and administration phase of the program. Items receiving high ratings were: adequacy of improvement in the variety of courses offered; adequacy of secretarial help; provisions for visiting other schools; and adequacy of departmental budget.

The industrial arts teacher education program appeared to be unsuccessful in establishing its purposes in terms of the service area needs. Additional information concerning the service area needs, presented in Chapter II, substantially supports the rating given by the staff.

In responding to the question, "How adequate is the improvement in departmental organization and administration?" raters agreed that most aspects were unsatisfactory. There have been organizational and administrative changes during the past five years, but the raters indicated that these had not contributed to the improvement of the industrial arts teacher education program. These changes may have been made in an attempt to economize, and probably were not based on the purposes and needs of the program.

Raters indicated that during the past ten years the industrial education staff had failed to plan adequately for the future development of the program. However, the cooperative participation in this study by the staff was an indication of its willingness to seek improvement and plan for the future development of the industrial arts

teacher education program. The head of the Secondary Education Department, who had served in that position for about one year, indicated that he was primarily interested in the future development of secondary education, and that industrial education will be taken care of later.

The raters indicated that the industrial education staff was not adequately informed about the new developments in industrial arts teacher education.

There appeared to be insufficient time reserved for staff planning and/or research. For this item the raters checked number four on the evaluative scale, which indicated that most aspects were unsatisfactory. The actual time devoted to planning and/or research was not as great as the time available for such activities.

The industrial education staff as rated by four staff members did not function effectively. The professor in charge of industrial education relied upon faculty members of other departments to teach many of the industrial education subject matter courses. There was evidence of inadequate coordination between industrial education personnel and the personnel of other departments.

Student personnel program--Area II. Of the sixteen questions pertaining to the student personnel program, ten were given the rating of four or below. Only two questions rated higher than five. The results of the evaluation of

Area II are presented in Table XV.

The adequacy of student records and test results available to departmental counselors was given a rating of eight, which was considered as a strength in the student personnel program of the industrial arts division.

The question concerning the follow-up of industrial education graduates received the lowest rating given in Area II. Since Clemson College did not employ a systematic program of follow-up studies or activities, each respondent rated nearly all aspects of the follow-up program unsatisfactory. Apparently, no organized attempt was made to communicate with graduates, teachers in the field, or prospective students.

The industrial arts staff rated student recruiting practices as generally unsatisfactory. Interviews with raters revealed that the Registrar's Office engaged in recruiting activities, but not for any specific department or curriculum.

Selection techniques were rated unsatisfactory. In most instances admittance to the institution entitled the student to major in industrial education. The student may gain admission to the college by passing the entrance examination. Any advanced student was allowed to transfer to industrial education if his grade point ratio did not fall below that required for matriculation in the institution;

TABLE XV

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE STUDENT PERSONNEL PHASE OF THEIR
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate is the department recruitment program?	3
2.	Are effective selection techniques used in admitting capable students into the teacher education curriculum?	4
3.	Are adequate records and test results available to department counselors?	8
4.	How satisfactory is the department counseling program?	4
5.	Are department organizations or clubs well organized and supported?	4
6.	How successfully do club activities stimulate professional growth?	5
7.	Are opportunities provided for the more able students to assume leadership responsibility for departmental functions?	4
8.	How enthusiastically do students assume leadership responsibility for departmental functions?	6
9.	How efficient is the department technique for disseminating information to students?	4
10.	Does the department make maximum use of newsletters by sending them to other staff and community members?	3

TABLE XV (continued)

Item	Question	Rating
11.	How adequate are facilities which encourage student use of typing and duplicating equipment required for thorough preparation for teaching?	5
12.	How complete are departmental records concerning each major?	5
13.	How effectively does the department utilize services of the college placement office?	5
14.	To what extent does the department continue to assist majors after graduation?	3
15.	How effective is the department follow-up program?	2
16.	How effective is the department program of selective retention?	4
Average rating for area		4.3

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

The dissimination of information to industrial arts teachers, members of other staffs, and other interested persons was rated unsatisfactory. The only attempt to communicate with these persons was through the Trade and Industries publication from the State Department of Education. The magazine, which occasionally devoted a small section to the subject of industrial arts, was considered an inadequate substitute for a departmental newsletter.

In answering the question pertaining to departmental assistance given to industrial arts majors following graduation, raters gave the program a score of three. The amount of assistance given to graduates was probably limited since there was only one full-time faculty member in the industrial arts program.

The faculty--Area III. The industrial arts teacher education faculty consisted of only those professors who were responsible for teaching industrial arts and industrial education courses. One of the professors was in charge of the industrial education curriculum and the other two professors were in the School of Engineering. In responding to five questions pertaining to the industrial arts faculty, raters indicated that most aspects of these parts of the program were satisfactory. However, two of the five questions received a rating of four. Results of the composite rating are presented in Table XVI.

TABLE XVI

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE FACULTY OF THEIR INDUSTRIAL
ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How satisfactorily is the work load of the industrial arts staff adjusted in relation to:	
	a. Normal college non-teaching duties?	7
	b. Maintenance of shops?	8
	c. Inventory and acquisition of tools and supplies?	8
	d. Requests to perform services of a special nature for the institution?	7
2.	How effectively does the department utilize services of outstanding teachers in the area?	4
3.	How satisfactory is the technical competency of the total staff?	7
4.	How rapidly are staff members working for advance degrees or improvement in their technical competency?	4
5.	How satisfactory is the quality of instruction given by graduate fellows or student assistants?	8
Average rating for area		6.6

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

High ratings were given to questions pertaining to work load, technical competency of the total staff, and the quality of instruction given by graduate fellows or student assistants. These strengths contributed to Area III receiving the highest average rating given to any area by the four industrial arts instructors.

Raters indicated that the services of outstanding teachers in the area were not effectively utilized in the industrial arts teacher education program. Occasionally professors of other institutions were invited to teach short summer courses, usually in the area of trade and industrial education. There was no evidence that the department attempted to engage industrial arts teachers who had demonstrated high degrees of competency in secondary school teaching to serve as special instructors.

The raters gave a score of four to the question concerning the progress of staff members in obtaining advanced degrees or improving technical competencies. Two of the professors held master's degrees, while the other professor held only a B. S. degree. No staff member indicated that he was working toward an advanced degree.

The curriculum--Area IV. There were ten questions to which raters responded in evaluating the industrial arts teacher education curriculum. An over-all rating of six was given for this area, which was an indication that more aspects

of the curriculum were satisfactory than unsatisfactory.

The composite rating is presented in Table XVII.

The industrial arts teacher education curriculum received high ratings on six of the items listed on the rating sheet. Generally, the strengths of this area were attributed to the variety of industrial arts subjects taught by other departments, the levels of skill and manipulative work achieved by the student, and the emphasis placed on requirements for teaching specialties.

The industrial education curriculum was designed to provide the student with a broad variety of experiences. To achieve this objective, industrial education subject matter courses were provided by each of six other departments. Students majoring in industrial education were required to take twelve semester hours in the Industrial Engineering Department, eight hours in the School of Architecture, five hours in the Engineering Graphics Department, four hours in the Electrical Engineering Department, three hours in the Ceramic Engineering Department, and three hours in the Textile Management Department. The Secondary Education Department provided the industrial education major with eighteen hours in professional education courses and twelve hours in industrial education courses. The student was allowed to select twenty-one semester hours of approved electives, six of which were in history. A total of 144

TABLE XVII

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE CURRICULUM OF THEIR INDUSTRIAL
ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate is the variety of courses offered by the department?	4
2.	How effectively does the department introduce new processes and materials from industry?	5
3.	Are departmental graduates prepared to teach in more than one industrial arts subjects?	8
4.	Do students achieve levels of skill in manipulative work?	8
5.	To what extent are students involved in group projects?	5
6.	How satisfactory are provisions for enriching experiences of students who are already competent in one of the usual industrial arts subjects?	4
7.	How effectively does the department demonstrate the importance of guidance?	
	a. Through conduct of staff?	6
	b. Through opportunities for student participation of guidance activities?	5
8.	Is adequate emphasis placed on requirements for teaching specialities?	8

TABLE XVII (continued)

Item	Question	Rating
9.	Is adequate emphasis placed on:	
	a. Professional industrial arts courses?	6
	b. Total requirements for a major in industrial arts?	6
	c. Student teaching?	4
	d. Development of manipulative skills?	7
	e. Principles of good design?	7
	f. Appropriate use of materials?	7
10.	How satisfactorily does the department prepare teachers for typical teaching positions in the service area?	6
	Average rating for area	6.0

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspect satisfactory
- 9-10 Nearly all or all aspects satisfactory

semester hours were required for graduation with the degree of Bachelor of Science.

The variety of courses offered by the industrial education division was rated inadequate. However, raters agreed that the variety of courses which industrial education majors took in other departments was adequate. Since these courses were not offered by the industrial education division, the catalogue course numbers and titles were somewhat misleading.

The industrial education division was given a rating of four on its provisions for enriching experiences of students who were already competent in one of the usual industrial arts subjects. Students were seldom permitted to substitute other courses for those required by the curriculum. If substitutions were allowed, there would be a limited number of suitable advanced courses available in each area.

Another question which received an unsatisfactory rating was concerned with the emphasis placed on student teaching. This question received a rating of four, and was closely related to questions in the following section.

Student teaching--Area V. The instrument used to evaluate the industrial arts teacher education program contained seven questions in the area of student teaching. Five of the seven questions received a rating of unsatisfactory, while other questions received ratings of five or

six. The evaluation of student teaching in the industrial arts teacher education program at Clemson College is presented in Table XVIII.

The selection of schools for student teaching assignments was sometimes dictated by expediency. The school used for the student teaching program did not employ an industrial arts teacher. Student teachers were required to conduct industrial arts classes for the entire first semester after which other student teachers assumed the responsibilities during the second semester. The public school was relieved of the responsibility of employing a half-time teacher for these classes.

The senior high school in which student teaching assignments were made had an enrollment of over eight hundred students and was located within five miles of the college campus. Twenty boys were taking the industrial arts course in which mechanical drawing was the only subject taught. Vocational trade courses were offered in the high school curriculum, but student teachers were not assigned to these courses. The trade and industries teacher acted as critic teacher to the industrial arts student teachers.

Other high schools in the immediate Clemson area did not offer industrial arts courses. However, there were several schools between twenty to thirty miles from the

TABLE XVIII

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE STUDENT TEACHING PROGRAM OF THEIR
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequately are students prepared for student teaching assignments?	5
2.	How carefully are schools selected for student teaching assignments?	3
3.	How satisfactory is the supervision of student teaching?	4
4.	How adequate is the variety of activities experienced by the student teachers?	4
5.	How adequate is the department criteria for admitting students to student teaching assignments?	5
6.	Do student teachers receive sufficient guidance from the department?	3
7.	How satisfactory are provisions for assisting student teachers with special problems arising from:	
	a. Technical qualifications?	6
	b. Social relationships?	4
	c. Professional relationships?	4
	d. Special situations arising from human behavior?	4
Average rating for area		4.2

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

college campus which had desirable industrial arts programs.

Because of the limited industrial arts program in the school at which student teachers were assigned, the variety of activities experienced by student teachers was considered inadequate. Another factor which influenced this evaluation was that student teachers taught senior high school students only.

A rating of four was given to the questions pertaining to the supervision of student teachers and the provisions made for assisting them with special problems relative to social and professional relationships. The attention of the reader is recalled to the fact that there was only one full-time faculty member in the industrial education division who had the responsibility of supervising student teaching, teaching industrial education courses, and teaching three secondary education courses.

One other area received an unsatisfactory rating which was probably due to the limited industrial education staff. A rating of three was given to the question concerning guidance offered to student teachers by the departmental advisor. Certain guidance activities were provided by the college, but departmental guidance was considered insufficient.

The over-all rating of Area V was 4.2 which indicated that more aspects of this area were unsatisfactory than

satisfactory. It was rated lower than any other area by the four raters. Student teaching was one of the areas which most desperately needed improvement. Some of the other areas, such as facilities and laboratories, were rated as being more adequate.

Facilities and laboratories--Area VI. The facilities and laboratories section of the evaluative instrument contained five questions, one of which had twelve parts. In answering and rating the sixteen items, the raters gave an over-all score of 5.0 to this area. Table XIX presents results of the combined ratings on industrial arts facilities and laboratories.

The industrial education division maintained a comprehensive general shop. Other shop facilities and laboratories were maintained by the Department of Industrial Engineering, Electrical Engineering, Ceramic Engineering, and Textile Management. The evaluation did not include these departments. The comprehensive general shop maintained by industrial education consisted of facilities for activities in general woodworking, general metals, ceramics, foundry, and general electricity. Each of these activities was provided on the unit shop basis in the departments listed above. The comprehensive general shop was designed to give the prospective teachers laboratory experiences similar to those required to teach in the public schools of the state.

TABLE XIX

COMPOSITE RATINGS BY FOUR CLEMSON COLLEGE INDUSTRIAL ARTS
INSTRUCTORS OF THE FACILITIES AND LABORATORIES OF THEIR
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate are the offices and essential furniture?	6
2.	How adequate are library materials for student use?	5
3.	How satisfactory are the department teaching aids?	4
4.	How satisfactory is the condition of class-room and shops in terms of:	
	a. Furniture?	6
	b. Condition and variety of machines and tools?	7
	c. Heating, lighting, and ventilation?	4
	d. Housekeeping and general appearance?	3
	e. Identification of safety zones?	4
	f. First aid kits?	6
	g. Number of exits?	8
	h. Washing and drinking fountains?	7
	i. Storage facilities?	4
	j. Display cases and bulletin boards?	4
	k. Finishing rooms?	2
	l. Necessary utilities?	6
5.	How effective is the procedure for obtaining necessary tools and supplies?	4
Average rating for area		5.0

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

In rating the facilities and laboratories maintained by the industrial education division, raters indicated that most aspects of the condition of classrooms and shops in terms of variety and condition of machines and tools, washing and drinking fountains, and number of exits were satisfactory.

The evaluation of the comprehensive general shop revealed unsatisfactory conditions in heating, lighting, ventilation, housekeeping, safety zones, storage facilities, display cases, finishing rooms, tool storage, and teaching aids. Plans were being made by the industrial education division to improve these conditions, but at the time of this writing no action had been taken to execute the plans. However, approximately \$2500.00 have been allocated for this purpose.

C. SUMMARY

The above section has presented a composite rating by four members of the Clemson College faculty, of the effectiveness of the industrial arts teacher education program in that institution. The evaluative instrument used in obtaining ratings was developed by the National Committee on Accreditation of Industrial Arts Teacher Education Programs, and is presented in the Appendix. By comparing the raters' answers to questions in the evaluative

instrument with the prescribed standards for industrial arts teacher education programs (presented in Chapter III), areas of adequacy and inadequacy in the program were identified. Some of these areas, listed and grouped according to the major areas of the evaluative instrument, are presented below.

Organization and Administration

Areas of adequacy

1. The improvement in the variety of courses offered was most adequate.
2. The departmental secretarial assistance was adequate.
3. The department made adequate provisions for staff members to visit other schools.
4. The budget seemed to be adequate for the present level of operation.

Areas of inadequacy

1. The industrial education division did not graduate a sufficient number of students to satisfy the demand for industrial arts teachers in South Carolina public schools.
2. The department did not exercise fully its freedom to develop learning experiences through cooperation with other departments, state officials, and curriculum committees.

3. There was only one full-time staff member in the division of industrial education.

4. During the past five to ten years, very few changes were made which improved the organization and administration in terms of objectives and purposes of industrial arts teacher education.

5. The multipurpose curriculum failed to distinguish the difference between students majoring in industrial arts and students majoring in trade and industrial education.

6. Staff members of other departments taught too many industrial arts subject matter courses. Coordination between staff members of these departments and the industrial education major professor was inadequate.

7. Staff members seldom visited and studied public schools in the service area.

8. The comprehensive general shop maintained by the department did not provide adequately the variety of industrial arts activities necessary in the preparation of industrial arts teachers. The department did not maintain unit shops.

9. There was no evidenced alertness for the need of new courses to keep pace with the changing times.

10. Since the industrial education program did not have departmental status, the administration was provided by a department with major interests in areas other than

industrial arts teacher education.

Student Personnel Program

Areas of adequacy

1. Student records and tests results were readily available to department counselors.

Areas of inadequacy

1. The industrial education staff did not take part in the student recruitment and orientation program.

2. Students were not carefully selected for the industrial arts teacher education program. Admission to the institution was the sole consideration for admission to the program.

3. Counseling services provided by the major advisor were inadequate.

4. Student clubs and organizations designed to stimulate professional growth were not adequately supported and encouraged by the department.

5. The extent to which students were encouraged to assume responsibility for departmental activities such as maintaining bulletin boards, libraries, and instructional aids was inadequate.

6. There was no effective program for releasing news and information to students and graduates.

7. The department did not maintain an adequate individual file of cumulative information about each student

classified as a major.

8. The department did not make periodic follow-up studies of the graduates.

9. The provisions for continual evaluation of each student accepted as a major were inadequate to facilitate the selective retention of favorable candidates for teaching positions.

The Faculty

Areas of adequacy

1. The staff work load was satisfactory in terms of the prescribed standards for the faculty of industrial arts teacher education programs.

2. The quality of instruction given by graduate fellows or student assistants was most satisfactory.

Areas of inadequacy

1. Members of the administrative staff and those teaching professional courses for industrial arts teachers did not have an earned doctor's degree.

2. The department did not utilize the services of industrial arts teachers who had demonstrated high degrees of competency in secondary school teaching and met required standards for college teachers.

The Curriculum

Areas of adequacy

1. The department was preparing prospective teachers

to teach in more than one industrial arts subject area.

2. The department provided the opportunity for students to achieve levels of skill in manipulative work.

3. Sufficient emphasis was placed on requirements for teaching specialties, development of manipulative skills, principles of good design, and appropriate use of materials.

Areas of inadequacy

1. A wide variety of courses which develop industrial arts skills were not provided within the industrial education department.

2. Programs were not adequately adjusted for industrial arts students who were clearly competent, through industrial work experience or similar activities, in one of the usual industrial arts areas.

3. Emphasis placed on student teaching was inadequate.

Student Teaching

Areas of adequacy

Since the student teaching phase of the industrial arts teacher education program did not receive ratings above six, no areas were identified as strengths of the program.

Areas of inadequacy

1. The school in which student teaching assignments

were made was probably selected on the basis of opportunism. There were other schools within the state which could provide for desirable student teaching experiences.

2. Supervision of student teaching was inadequate.

3. The variety of activities experienced by the student teachers was inadequate.

4. Student teachers did not receive sufficient guidance from the supervisor of student teaching.

5. Student teachers did not receive sufficient assistance with special problems arising from social relationships, and human behavioral situations.

Facilities and Laboratories

Areas of adequacy

1. The variety and condition of machines and tools in the comprehensive general shop were most satisfactory.

2. The condition of classrooms and shops in terms of washing and drinking fountains and number of exits was adequate.

Areas of inadequacy

1. There was an inadequate supply of teaching aids available for classroom use.

2. The shop did not provide optimum thermal environment.

3. Housekeeping and general appearance of the shop were not in keeping with good shop practices.

4. Materials storage facilities were inadequate.

5. The quantity and quality of display cases and bulletin boards were inadequate.

6. The storage facilities for tools and supplies were inadequate.

7. The shop was too small for the activities provided. The layout did not conform with acceptable shop layout practices.

CHAPTER V

EVALUATION OF THE INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM AT SOUTH CAROLINA STATE COLLEGE

A. INTRODUCTION

The purpose of this chapter is to report the findings of the evaluation of the industrial arts teacher education program at South Carolina State College. The procedures and organization employed in the previous chapter were employed also in this chapter.

B. SOUTH CAROLINA STATE COLLEGE

The South Carolina General Assembly of 1896 enacted statutes providing for the establishment of a normal, industrial, agricultural, and mechanical college to provide opportunities in higher education for the Negro youth of the state. The school officially opened in September, 1896, with a small enrollment. The physical plant and facilities consisted of eight small buildings, a small dairy herd, and 135 acres of land.¹

South Carolina State College provided twenty-seven curriculums under the Schools of Agriculture and Home

¹South Carolina State College, catalogue vol. XLIX. (June, 1960), 23-26.

Economics, Arts and Sciences, Education, and Industrial Education. In addition, it provided a School of Law, a School of Graduate Studies, a Graduate Extension School, and a Summer School. The college was approved by the State Department of Education, by the Southern Association of Colleges and Secondary Schools as a Class "A" institution, and by the Association of American Colleges.

Including Summer School, the total enrollment of South Carolina State College was about 3400 in 1959-60. Approximately 110 of the students were enrolled in the School of Industrial Education. Only nine students graduated with industrial arts teaching certificates during that year.

Under various titles, the School of Industrial Education has operated continuously since the founding of the college. Titles of the school evolved from the Division of Mechanic Arts to the School of Engineering and Industrial Education, and finally to the School of Industrial Education. In 1958 the Board of Trustees decreed that no new students may be enrolled to pursue curricula leading to any degree in engineering. This enactment left the School of Industrial Education with three areas of specialization in which students could obtain a bachelor of science degree. Those areas were Industrial Arts Education, Vocational-Technical Teacher Education, and Technical Education.

The School of Industrial Education stated its functions and services as follows:

The general function of the School of Industrial Education is to provide educational and training experiences in all phases of industrial education above the secondary level. The school also services other schools of the institution with special courses in driver education, industrial arts for the elementary teacher, household mechanics, and leisure time activities and hobbies for students and faculty. Courses in household mechanics have special appeal for students of agriculture, home economics, and the natural sciences.²

The industrial arts teacher education program at South Carolina State College is discussed in the following sections which present the results of an evaluation of that program.

Methods and Procedures Used in the Evaluation

The researcher obtained permission from the administration of the South Carolina State College to visit the institution, interview members of the Industrial Education staff, and procure data needed for the study. The Dean of the School of Industrial Education pledged the cooperation of his office and teaching staff to assist in the procurement of data necessary for the study.

The standards and criteria used in the evaluation of the industrial arts teacher education program at South Carolina State College are presented respectively in Chapter III and in the Appendix of this study.

²Ibid., p. 150.

The evaluative instrument was administered by the Dean and eight faculty members of the School of Industrial Education. During an interview with the Dean, each item in the instrument was discussed and a rating was given for each question pertaining to the program. Each staff member completed the instrument and returned it to the researcher during a personal interview. A composite of the nine ratings was made in an attempt to obtain the collective thinking of persons responsible for the industrial arts teacher education program at State College.

Evaluation Findings

The composite rating is presented and discussed briefly under the six major headings: organization and administration, the student personnel program, the faculty, the curriculum, student teaching, and facilities and laboratories. The rating scale used with the evaluative instrument appears also on the table following each major area rated. The rater adapted the ten point progressive scale to each question to indicate his estimate of how well the department meets the prescribed standards.

Organization and administration--Area I. In responding to the eleven questions about the organization and administration of the industrial arts teacher education program, raters indicated that more aspects were satisfactory

than unsatisfactory. Table XX presents composite ratings for Area I in the evaluation of the South Carolina State College program for the preparation of industrial arts teachers.

The nine South Carolina State College industrial arts instructors gave high ratings to five facets of their industrial arts teacher education program. These facets were considered as definite strengths in that program.

The department was rated as being most successful in establishing its purposes in terms of service area needs and in meeting those needs.

The adequacy of the improvement in the variety of courses offered and the departmental organization was rated as being most satisfactory.

Raters agreed that the department had kept informed with new developments in industrial arts teacher education.

Questions receiving ratings below five were considered as areas of inadequacy in the program. Two questions received low ratings and were included in this category.

In relation to the alertness of the department to the need for new courses, raters indicated that more aspects were unsatisfactory than satisfactory. There had been no courses deleted from the industrial arts curriculum during the past three years, and only minor changes were made in the existing courses.

TABLE XX

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE
INDUSTRIAL ARTS INSTRUCTORS OF THE ORGANIZATION
AND ADMINISTRATION OF THEIR INDUSTRIAL ARTS
TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How successful is the department in establishing its purpose in terms of service area needs?	7
2.	How adequate is the improvement in:	
	a. Variety of courses offered?	7
	b. Departmental organization?	8
	c. Departmental administration?	6
3.	How successful is the department in:	
	a. Meeting needs of the service area?	7
	b. Offering special courses?	6
	c. Maintaining admission standards?	5
4.	How alert is the department to the need for new courses?	4
5.	How effectively has the department planned for future development of the program?	6
6.	How satisfactory has the department kept informed with new developments in industrial arts teacher education?	7
7.	How adequate is the secretarial help for the department?	4
8.	How satisfactory are provisions for visiting other schools?	6
9.	How adequate is the time reserved for staff planning and/or research?	6

TABLE XX (continued)

Item	Question	Rating
10.	How effectively does the department staff function?	6
11.	How adequate is the department budget?	5
Average rating for area		6.0

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

Raters indicated that the secretarial assistance was inadequate. There was only one secretary for the Dean of the School of Industrial Education and ten staff members.

The Dean of the School of Industrial Education was responsible for administering the program of industrial arts teacher education. Although the school did not have departments, it did provide three areas of specialization. The professors in each of these areas were directly under the supervision of the Dean, since there were no chairmen or administrators equivalent to the department head.

One major change in the school during the past decade was to eliminate all engineering curricula. The engineering equipment and facilities became an asset to the industrial arts teacher education program and were being used to provide rich experiences for the students.

The School of Industrial Education had eight staff members who had industrial arts teaching responsibilities. Only one professor devoted full-time to industrial arts activities. Other professors taught a combination of industrial arts, technical education, and vocational-technical education courses. All industrial arts subject matter courses were taught by these eight professors who were under a single administrative unit.

Student personnel program--Area II. From sixteen items concerning the student personnel program in industrial

arts teacher education, six were rated unsatisfactory. The over-all rating for Area II was 5.0, which indicated that more aspects were satisfactory than unsatisfactory. The results of the composite rating are presented in Table XXI.

The facets of the student personnel program which received high ratings were those concerning the availability of records and tests results to departmental counselors, adequacy of counseling program, provisions for assuming student leadership responsibilities, and enthusiasm with which students accept leadership responsibilities.

Student recruitment activities were limited almost entirely to those conducted by the Registrar's Office. Occasionally the School of Industrial Education learned of potential candidates for the industrial arts teaching profession from the state T. and I. teacher trainer and from teachers in the public schools. It seemed possible that the latter source could become one of the most important means of recruitment.

The School of Industrial Education did not maintain admission standards to augment those established by the institution. If a student gained admission to the institution, he was admitted to the industrial arts program without question. After the student was accepted, he received considerable guidance and counseling from members of the Industrial Education staff. This was the only method

TABLE XXI

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE
INDUSTRIAL ARTS INSTRUCTORS OF THE STUDENT PERSONNEL
PHASE OF THEIR INDUSTRIAL ARTS TEACHER
EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate is the department recruitment program?	4
2.	Are effective selection techniques used in admitting capable students into the teacher education curriculum?	4
3.	Are adequate records and test results available to department counselors?	8
4.	How satisfactory is the department counseling program?	8
5.	Are department organizations or clubs well organized and supported?	4
6.	How successfully do club activities stimulate professional growth?	5
7.	Are opportunities provided for the more able students to assume leadership responsibility for departmental functions?	8
8.	How enthusiastically do students assume leadership responsibility for departmental functions?	7
9.	How efficient is the department technique for disseminating information to students?	4
10.	Does the department make maximum use of newsletters by sending them to other staff and community members?	2

TABLE XXI (continued)

Item	Question	Rating
11.	How adequate are facilities which encourage student use of typing and duplicating equipment required for thorough preparation for teaching?	3
12.	How complete are departmental records concerning each major?	7
13.	How effectively does the department utilize services of the college placement office?	0*
14.	To what extent does the department continue to assist majors after graduation?	3
15.	How effective is the department follow-up program?	2
16.	How effective is the department program of selective retention?	6
Average rating for area		5.0

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

*Not included in average rating for area.

employed which resulted in some degree of selectivity.

The student personnel program included only one club which served students in the industrial arts teacher education program. This organization was composed of students from each of the three areas of specialization in the School of Industrial Education. There was no student club which existed exclusively for industrial arts students.

The School of Industrial Education did not provide effective means for disseminating information to students and graduates. It also failed to show evidence that an effort was made to assist students after graduation. Allied with these factors was the absence of a follow-up program.

A low rating was given to question eleven, which referred to the adequacy of departmental typing and duplication equipment available for student use. Students were permitted to send materials for typing and duplicating to the College Typing Center. They did not have the privilege of operating this equipment and gaining experiences which would be of great value to them as teachers in the public schools.

The college did not maintain a placement office to assist students in securing a position after graduation. The Registrar's Office and Guidance Office cooperated with academic departments in giving some placement assistance to students. This did not appear to be as effective as the

Placement Office method of assisting students in getting desirable jobs.

The faculty--Area III. The industrial arts teacher education faculty consisted of the Dean of the School of Industrial Education, one associate professor, one assistant professor, and six instructors. The Dean had an Ed.D. degree, the associate professor had a M.S. degree, and each of the other staff members had a B.S. degree. Four of the instructors stated that they were actively pursuing an advanced degree or engaging in activities to improve their technical competency.

High ratings were given to questions pertaining to the staff's work load, technical competency, and efforts toward improving technical competency.

The school did not employ graduate fellows or student assistants to aid the staff with the instructional program. Occasionally, guest lecturers were invited to aid with the summer program. These persons were selected on the basis of recommendations by other institutions and recommendations of the Industrial Education staff members who had personal contact with prospective guest lecturers. The extent to which visiting lecturers were used had declined somewhat during the past four years.

Area III received a low rating on the question of how effectively the department utilized the services of

outstanding teachers from the public schools of the state. This was the only question in the major area that received an unsatisfactory rating. The over-all rating was 6.4, which indicated that more aspects concerning the faculty were satisfactory than unsatisfactory. The results of a composite rating of Area III are presented in Table XXII.

The curriculum--Area IV. The industrial arts teacher education curriculum provided a wide variety of courses which developed several kinds of industrial arts skills. Courses were offered in woodworking, machine shop, forging, household mechanics, auto mechanics, masonry, tailoring, electricity, painting, mechanical drawing, and comprehensive industrial arts shop. Students majoring in industrial arts were required to take sixteen credit hours of courses listed as industrial education, plus thirty-six credit hours of restricted electives. They could elect additional courses which develop skills in a certain combination of industrial arts teaching specialties. Fifteen semester hours were devoted to professional industrial arts courses such as methods and organization.

The raters gave Area IV an over-all rating of 6.8, which indicated that more aspects of the curriculum for industrial arts teacher education were satisfactory than unsatisfactory. The results of ratings of Area IV are presented in Table XXIII, pages 125-126.

TABLE XXII

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE INDUSTRIAL ARTS INSTRUCTORS OF THE FACULTY OF THEIR INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How satisfactorily is the work load of the industrial arts staff adjusted in relation to:	
	a. Normal college non-teaching duties?	7
	b. Maintenance of shops?	7
	c. Inventory and acquisition of tools and supplies?	7
	d. Requests to perform services of a special nature for the institution?	6
2.	How effectively does the department utilize services of outstanding teachers in the area?	2
3.	How satisfactory is the technical competency of the total staff?	8
4.	How rapidly are staff members working for advance degrees or improvement in their technical competency?	8
5.	How satisfactory is the quality of instruction given by graduate fellows or student assistants?	0*
	Average rating for area	6.4

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

*Not included in average rating for area.

TABLE XXIII

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE
INDUSTRIAL ARTS INSTRUCTORS OF THE CURRICULUM OF THEIR
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate is the variety of courses offered by the department?	8
2.	How effectively does the department introduce new processes and materials from industry?	4
3.	Are departmental graduates prepared to teach in more than one industrial arts subject?	8
4.	Do students achieve levels of skill in manipulative work?	7
5.	To what extent are students involved in group projects?	6
6.	How satisfactory are provisions for enriching experiences of students who are already competent in one of the usual industrial arts subjects?	5
7.	How effectively does the department demonstrate the importance of guidance:	
	a. Through conduct of staff?	7
	b. Through opportunities for student participation of guidance activities?	4
8.	Is adequate emphasis placed on requirements for teaching specialties?	8

TABLE XXIII (continued)

Item	Question	Rating
9.	Is adequate emphasis placed on:	
	a. Professional industrial arts courses?	7
	b. Total requirements for a major in industrial arts?	8
	c. Student teaching?	8
	d. Development of manipulative skills?	8
	e. Principles of good design?	7
	f. Appropriate use of materials?	8
10.	How satisfactorily does the department prepare teachers for typical positions in the service area?	6
	Average rating for area	6.8

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

High ratings were given to questions pertaining to the variety of courses offered, the preparation of graduates in more than one industrial arts subject, provisions for students to achieve levels of skill in manipulative work, and demonstration of the importance of guidance through conduct of staff. Items eight and nine on the rating sheet also received high ratings.

Low ratings were given to questions two and seven concerning the alertness of the staff toward introducing new processes and materials from industry and the importance placed upon guidance activities. In an earlier section the staff also received an unsatisfactory rating on its ability to recognize the need for new courses.

Student teachers were not given adequate opportunities to assume guidance responsibilities. They were provided some experiences in handling guidance problems during their student teaching assignment. These experiences did not exemplify those in public schools, since student teaching was performed in a campus laboratory school.

Student teaching--Area V. All of the industrial arts seniors were assigned student teaching responsibilities in the departmental comprehensive general shop, with students from a laboratory school. These public school students, who were of the elementary and junior high school age level, did not provide student teachers with experiences

typical of those needed for public school teaching.

The professor in charge of the general industrial arts shop also had the responsibility of supervising student teaching. He maintained very close supervision over student teachers and emphasized the importance of thorough preparation. A minimum of ninety clock hours of directed teaching was required to meet the state regulations for certification.

With the exception of questions two and five, all questions concerning the student teaching program received high ratings. The two inadequacies, as indicated by the raters, were in the laboratory method of student teaching and the criteria for admitting students to student teaching assignments (Table XXIV). An over-all rating of 6.2 was given to the area of student teaching.

Facilities and laboratories--Area VI. The evaluation of facilities and laboratories used in the industrial arts teacher education program revealed that more aspects of that area were unsatisfactory than satisfactory. The over-all rating was 4.9. Table XXV, page 130, presents the results of a composite rating consisting of nine individual ratings.

Since the engineering curricula were eliminated, a variety of equipment was available for use with the industrial arts program. This equipment was used to enrich the

TABLE XXIV

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE
INDUSTRIAL ARTS INSTRUCTORS OF THE STUDENT TEACHING
PROGRAM OF THEIR INDUSTRIAL ARTS TEACHER
EDUCATION PROGRAM

Item	Question	Rating
1.	How adequately are students prepared for student teaching assignments?	8
2.	How carefully are schools selected for student teaching assignments?	1
3.	How satisfactory is the supervision of student teaching?	7
4.	How adequate is the variety of activities experienced by the student teachers?	7
5.	How adequate is the department criteria for admitting students to student teaching assignments?	4
6.	Do student teachers receive sufficient guidance from the department?	7
7.	How satisfactory are provisions for assisting student teachers with special problems arising from:	
	a. Technical qualifications?	7
	b. Social relationships?	7
	c. Professional relationships?	7
	d. Special situations arising from human behavior?	7
	Average rating for area	6.2

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

TABLE XXV

COMPOSITE RATINGS BY NINE SOUTH CAROLINA STATE COLLEGE
INDUSTRIAL ARTS INSTRUCTORS OF THE FACILITIES AND
LABORATORIES OF THEIR INDUSTRIAL ARTS
TEACHER EDUCATION PROGRAM

Item	Question	Rating
1.	How adequate are the offices and essential furniture?	6
2.	How adequate are library materials for student use?	4
3.	How satisfactory are the department teaching aids?	9
4.	How satisfactory is the condition of class-rooms and shops in terms of:	
	a. Furniture?	5
	b. Condition and variety of machines and tools?	7
	c. Heating, lighting, and ventilation?	3
	d. Identification of safety zones?	6
	e. Housekeeping and general appearance?	5
	f. First aid kits?	4
	g. Number of exits?	5
	h. Washing and drinking fountains?	3
	i. Storage facilities?	4
	j. Display cases and bulletin boards?	3
	k. Finishing rooms?	2
	l. Necessary utilities?	5
5.	How effective is the procedure for obtaining necessary tools and supplies	7
Average rating for area		4.9

Note: Rating Scale

- 0 Item not present in this department, does not apply
- 1- 2 All or nearly all aspects unsatisfactory
- 3- 4 More aspects unsatisfactory than satisfactory
- 5- 6 More aspects satisfactory than unsatisfactory
- 7- 8 Most aspects satisfactory
- 9-10 Nearly all or all aspects satisfactory

existing industrial arts curriculum as well as to provide practical laboratories for the technical education curriculum. There were ten shops and laboratories that provided a broad variety of activities in which the student may develop basic industrial arts skills.

The question concerning departmental teaching aids received an extremely high rating.

The condition and variety of machines and tools, and the procedure for obtaining necessary tools and supplies were rated as most satisfactory.

A low rating was given to the question concerning the adequacy of library materials in the department. The School of Industrial Education did not maintain a library of curriculum materials available for student use. However, most staff members maintained personal libraries in their offices and frequently made these available to select students.

Low ratings were given also to areas concerning the condition of shops and laboratories in terms of heating, lighting, ventilation, first aid kits, washing and drinking fountains, storage facilities, display cases, bulletin boards, and finishing rooms. Heating, lighting, and ventilation were especially poor in the masonry laboratory. The finishing rooms in the woodshop and the comprehensive general shop were also in very poor condition.

C. SUMMARY

The above section has presented a composite rating, by nine members of the Industrial Education faculty, of the effectiveness of the industrial arts teacher education program at South Carolina State College. The evaluative instrument used in obtaining ratings was developed by the National Committee on Accreditation of Industrial Arts Teacher Education Programs, and is presented in the Appendix. By comparing the raters' responses to questions in the evaluative instrument with the prescribed standards for industrial arts teacher education programs (presented in Chapter III), areas of adequacy and inadequacy were identified. Some of these areas, listed under the major headings used in the evaluative instrument, are presented below.

Organization and Administration

Areas of adequacy

1. The department was successful in establishing its purposes in terms of service area needs and meeting those needs.

2. Improvement in the variety of courses offered was adequate.

Areas of inadequacy

1. Staff members were not allowed sufficient time and were not encouraged to visit and study public schools in the state.

2. Staff members did not have sufficient clerical help.

3. The administration was not sufficiently alert to the need for new courses.

Student Personnel Program

Areas of adequacy

1. The availability of records and tests results to departmental counselors and the counseling program were satisfactory.

2. Opportunities provided for the more able students to assume leadership responsibilities, and the enthusiasm to which students accept these responsibilities were most satisfactory.

3. Departmental records concerning each major were satisfactory.

Areas of inadequacy

1. The School of Industrial Education did not participate adequately in the student recruitment program.

2. The School of Industrial Education did not show evidence of careful selection of students for the industrial arts teacher education program. Admission to the institution was the sole consideration for admission to the industrial arts curriculum.

3. There was no student club which was exclusively for industrial arts majors.

4. The industrial arts division did not have an effective program for releasing news and information to students and graduates.

5. No provisions were made for student use and operation of typing and duplicating equipment needed in the production of instructional materials and class reports or assignments. (Students could make requests for typing through the College Typing Center.)

6. The industrial arts division failed to provide adequate assistance to majors after graduation. Less than 5 per cent of the graduates were visited by a representative of the school during their first year on the job.

7. The School of Industrial Education did not engage in an effective follow-up program.

The Faculty

Areas of adequacy

1. The work load of the staff was most satisfactory.
2. The technical competency of the staff was adequate.
3. Staff members were working for advanced degrees or improvement in their technical competency.

Areas of inadequacy

1. Only two of the nine staff members in the School of Industrial Education had a master's degree or above.
2. The School of Industrial Education did not

utilize the services of industrial arts teachers who had demonstrated high degrees of competency in secondary school teaching and met required standards for college teachers.

The Curriculum

Areas of adequacy

1. The variety of courses offered was most satisfactory.
2. Graduates were prepared to teach in more than one industrial arts subject.
3. Adequate emphasis was placed on requirements for teaching specialties, professional industrial arts courses, student teaching, development of manipulative skills, principles of good design, and appropriate use of materials.

Areas of inadequacy

1. Curriculum activities did not provide for experiences that lead to an understanding of good guidance principles.
2. Provisions were not made for enriching experiences of students who were already competent in one of the usual industrial arts subjects.
3. The department did not effectively introduce new processes and materials from industry.

Student Teaching

Areas of adequacy

1. Students were prepared for student teaching

assignments.

2. The supervision of student teachers was satisfactory.

3. Student teachers received sufficient guidance from the department.

4. Provisions for assisting student teachers with special problems were adequate.

Areas of inadequacy

1. Student teachers did not gain experience in public school teaching.

2. The critic teacher did not hold a master's degree.

3. Student teachers were working with elementary and junior high school level classes only.

4. Student teachers were not participating in all of the activities expected of a fully qualified industrial arts teacher.

Facilities and Laboratories

Areas of adequacy

1. Nearly all aspects of the departmental teaching aids were satisfactory.

2. The condition and variety of machines and tools were satisfactory.

3. The procedure for obtaining necessary tools and supplies was adequate.

Areas of inadequacy

1. The school did not maintain a library of curriculum materials for student use.
2. The shops were not maintaining adequate first aid kits.
3. Heating, lighting, and ventilation were inadequate in four shops.
4. Shops did not provide adequate washing facilities and drinking fountains.
5. Storage facilities for supplies, projects, and tools were inadequate.
6. Shops did not provide adequate student locker facilities.
7. The finishing rooms in the woodshop and comprehensive general shop were inadequate.

CHAPTER VI

SUMMARY AND IMPLICATIONS

A. INTRODUCTION

The purpose of this study was to evaluate the industrial arts teacher education programs in South Carolina colleges. In achieving the purpose of this study, a state-wide survey of personnel needs for high school industrial arts programs was made. Standards and evaluative criteria for industrial arts teacher education programs were identified and applied to the industrial arts teacher education programs at Clemson College and South Carolina State College. Areas in which improvement was needed were identified through analyses of data obtained from the state-wide survey and the evaluation of industrial arts teacher education programs.

This chapter is devoted to a summary of the study and to such implications as appear pertinent to the industrial arts teacher education programs at Clemson College and South Carolina State College.

B. SUMMARY

The main objective of Chapter II was to determine the personnel needs for industrial arts programs in South Carolina high schools. Two questionnaires were developed,

one designed for high school principals and the other for high school industrial arts teachers. These questionnaires were mailed to all of the principals and industrial arts teachers in the 418 high schools in South Carolina. Returns were submitted by 266 principals and 109 industrial arts teachers.

Some of the findings which seemed to have significance for the industrial arts teacher education programs in South Carolina colleges were as follows:

1. Industrial arts programs were provided by high schools with enrollments which exceeded four hundred students. Schools with less than four hundred students usually did not have industrial arts programs or experienced difficulty in providing them.

2. High school industrial arts programs generally consisted of only one teacher who was responsible for teaching general shop, woodworking, and drawing courses in grades nine through eleven.

3. High school principals collectively anticipated the need for approximately fifty new industrial arts teachers during the 1961-62 school term. However, slightly more than 70 per cent of the schools which had industrial arts programs indicated that they planned to continue with the same program during the next three to five years.

4. About 60 per cent of the high schools did not

provide industrial arts courses because the schools were too small or qualified industrial arts teachers could not be obtained. The expressed difficulty in obtaining qualified teachers was indicative of a shortage of teachers in this field.

5. A majority of the high schools with enrollments of four hundred or above which did not have industrial arts indicated that they would initiate programs if qualified industrial arts teachers were available.

6. One out of every five high schools in the state had industrial arts facilities which were not being used. Most of these schools indicated that the facilities would be used if qualified teachers were available.

7. Slightly more than 71 per cent of the industrial arts teachers who returned questionnaires had graduated with majors in Industrial Education at Clemson College or South Carolina State College.

8. Almost one-fourth of the high school industrial arts teachers failed to meet the state minimum requirements for certification as industrial arts teachers.

9. Almost one-half of the industrial arts teachers were not actively engaged in activities which they felt contributed to the improvement of their professional or technical competencies.

10. Courses in woodworking, drawing, and general

shop were taught most frequently in the high school industrial arts programs. Woodworking appeared to be over-emphasized, while courses in electricity, plastics, ceramics, general metals, machine shop, automotive mechanics, textiles, and graphic arts seemed to be under-emphasized.

11. Slightly more than one-half of the industrial arts teachers devoted full-time to industrial arts courses, and one-fourth taught vocational subjects in addition to industrial arts.

Chapter III was devoted to a description of the development of standards and evaluative criteria for industrial arts teacher education programs. The standards, developed by the National Committee on Accreditation of Industrial Arts Teacher Education Programs, are presented in Chapter III, and the evaluative criteria developed by the same organization are presented in the Appendix.

The standards and criteria were used in evaluating the industrial arts teacher education programs at Clemson College and South Carolina State College. Chapters IV and V presented reports of the evaluation in each of the institutions, and identified some areas of adequacy and inadequacy in the Clemson College program and the South Carolina State College program, respectively.

Some of the major areas of adequacy identified in the industrial arts teacher education program at Clemson College were as follows:

1. The variety of courses offered was most satisfactory.

2. Adequate provisions were made for staff members to visit other schools.

3. The departmental budget was sufficient for the present level of operation.

4. Student records and tests results were readily available to department counselors.

5. The staff work load was satisfactory in terms of the prescribed standards for the faculty of industrial arts teacher education programs.

6. The department was preparing prospective teachers to teach in more than one industrial arts subject area.

7. Sufficient emphasis was placed on development of manipulative skills, principles of good design, and appropriate use of materials.

8. The variety and condition of machines and tools in the comprehensive general shop were satisfactory.

Some of the major areas of inadequacy identified in the industrial arts teacher education program at Clemson College were as follows:

1. The industrial education division did not graduate a sufficient number of prospective teachers to satisfy the demands for industrial arts teachers in South Carolina public schools.

2. The division did not have departmental status, and had only one full-time staff member.

3. Enrollment in the industrial education curriculum decreased by 59 per cent during the 1950-60 decade.

4. There was poor coordination between the industrial education division and other departments.

5. There was no evidenced alertness for the need of new courses to keep pace with the changing times.

6. The industrial education division was not participating satisfactorily in the student recruitment and orientation program.

7. There was no effective program for releasing news and information to students and graduates.

8. There was no evidence that the division engaged in periodic follow-up studies of the graduates.

9. Members of the administrative staff and those teaching professional courses for industrial arts teachers did not have earned doctor's degrees.

10. The industrial education curriculum was not providing an adequate variety of industrial arts subject matter courses within the division.

11. Provisions were not made to adjust the program of students who are clearly competent in one of the industrial arts skills.

12. There was a lack of emphasis placed on the importance of student teaching.

13. The school in which student teaching assignments were made did not provide an adequate high school industrial arts program.

14. The supervision of student teaching was inadequate.

15. Student teachers were not provided sufficient guidance and assistance with special problems arising from social relationships, professional relationships, and disciplinary situations.

16. The supply of teaching aids available for classroom use was inadequate.

17. The comprehensive general shop, which was too small for the activities provided, had inadequate storage facilities for tools, materials, and student projects.

18. The unit shops were under the administration and supervision of other departments in the college.

Some of the major areas of adequacy identified in the industrial arts teacher education program at South Carolina State College were as follows:

1. The department was successful in establishing its purposes in terms of service area needs and meeting those needs.

2. The availability of records and tests results to departmental counselors was adequate.

3. Departmental records concerning each major were satisfactory.

4. Opportunities provided for the more able students to assume leadership responsibilities in departmental functions were most satisfactory.

5. The work load of the staff was adequate in terms of the prescribed standards for the faculty of industrial arts teacher education programs.

6. The technical competency of the staff was satisfactory.

7. Staff members were working for advanced degrees or improvement of their technical competency.

8. The variety of courses offered was adequate.

9. Adequate emphasis was placed on professional industrial arts courses, student teaching, development of manipulative skills, principles of good design, and appropriate use of materials.

10. Students were prepared for student teaching assignments.

11. The supervision of student teachers was satisfactory.

12. Provisions for assisting student teachers with special problems were adequate.

13. Nearly all aspects of the departmental teaching aids were satisfactory.

14. The condition and variety of machines and tools were adequate.

Some of the major areas of inadequacy identified in the industrial arts teacher education program at South Carolina State College were as follows:

1. Industrial education staff members were neither allowed sufficient time nor encouraged to visit and study public schools in the state.

2. Staff members were not sufficiently provided with clerical assistance.

3. The School of Industrial Education was not participating in an efficient student recruitment program.

4. There was no student club which was exclusively for industrial arts majors.

5. There was no effective program for releasing news and information to students and graduates.

6. The industrial arts staff was not providing adequate assistance to majors after graduation.

7. The School of Industrial Education did not engage in an effective follow-up program.

8. Only two out of nine faculty members held master's degrees or above.

9. Provisions were not made for enriching experiences of students who are already competent in one of the usual industrial arts subjects.

10. The staff was not effectively introducing new processes and materials from industry.

11. Student teaching experiences were limited to the campus laboratory school.

12. The critic teacher in the student teaching program did not possess a master's degree.

13. Student teachers were teaching elementary and junior high school pupils only.

14. The School of Industrial Education was not maintaining a library of curriculum materials for student use.

15. Heating, lighting, and ventilation in the shops were inadequate.

16. Storage space provided for supplies, tools, and projects was inadequate.

17. Student locker facilities, washing facilities, and drinking fountains were inadequate.

18. Finishing rooms in the woodshop and the comprehensive general shop were inadequate.

C. IMPLICATIONS

Implications as appear pertinent to the industrial arts teacher education programs at Clemson College and South Carolina State College were based on (1) an analysis of an evaluation of each program, (2) an analysis of findings from a state-wide survey of industrial arts programs in the public high schools, (3) the writer's interpretation of evaluation and survey findings, and (4) the

standards for industrial arts teacher education programs, developed by the American Council on Industrial Arts Teacher Education. In some instances the writer deviated from the prescribed standards to present implications concerning those aspects peculiar to the program being evaluated. However, these deviations provided implications which were consistent with modern trends in industrial arts teacher education programs.

Organization and Administration

Clemson College. The administrative structure of the existing program of industrial arts teacher education should be reorganized. In part, this reorganization probably should include the establishment of a department of Industrial Education which would provide a curriculum in each of three areas of specialization--industrial arts education, trade and industrial education, and technical education. A multi-purpose program of this type would require at least three staff members. Each specialization area should have a minimum of one staff member who has competencies in that area.

Industrial arts subject matter courses which were offered by other departments but were taught primarily for the benefit of industrial arts students should be transferred to the Industrial Education Department. Specifically,

this would include about six courses which were listed as industrial arts but were administered by the Industrial Engineering department. Two professors who shared the teaching responsibilities of these courses should be transferred also. Shop facilities used with these courses should be under the administration of Industrial Education. The utilization of other facilities common to both Industrial Engineering and Industrial Education departments should be coordinated by department heads and staffs.

The Industrial Education department head and staff should develop attitudes of cooperativeness toward other departmental staffs, state officials, and curriculum committees. Staff members should be encouraged to visit other departments on the campus and coordinate industrial arts courses with the related activities in those departments. This could furnish an excellent means for promoting better relations among departments. The Industrial Education Department should provide opportunities for its staff members to participate in cooperative activities and research projects undertaken jointly with other departments.

The department should improve its working relationship with the officials of the State Department of Education. There should be full cooperation between the department and offices of the State Supervisor of Trade and Industrial Education and the Director of the Division of Teacher

Education and Certification. Through this relationship the teacher education program would have a voice in improving teacher certification requirements and the State Department of Education could assist in the development of curricular changes in the teacher education program. These relationships seem to be necessary elements in the promotion of growth and improvement of industrial arts education in the state.

Members of the Industrial Education staff should take an active part in curriculum planning and development within the department and the school. Examination and evaluation of the curriculum must be carried on continuously if the program is to make progress toward achieving the prescribed standards and toward keeping abreast with changing times.

The findings of a state-wide survey of industrial arts programs in the public high schools (Chapter II) suggests that the Clemson teacher education program did not provide a sufficient number of industrial arts teachers. There are possibly numerous reasons why this shortage of qualified teachers exists. This study was concerned with only those reasons which were directly related to the organization and administration of the industrial arts teacher education program. The student enrollment in industrial education continuously decreased during the past ten years

while the demand for industrial arts teachers steadily increased. This diminishing enrollment could be due to an evidenced lack of interest and support by the administration and the departmental staff. These two factors, over a period of several years, could be detrimental to any program regardless of its worthiness. Generally, students will avoid majoring in a department which is weak in faculty, curriculum, facilities, and reputation. Through a lack of interest and support these weaknesses seem to be inevitable.

With an increasing demand for qualified industrial arts teachers and with an improved teacher education program, student enrollment in industrial arts will most likely begin to increase. Some other factors which have an effect upon enrollment are presented in the sections of this chapter pertaining to the student program, the curriculum, and facilities and laboratories.

South Carolina State College. The organizational structure of the School of Industrial Education appeared to be one of the strengths of the industrial arts teacher education program at South Carolina College. One change in that structure which might further strengthen the program would be to appoint a director or chairman for the industrial arts division. This position would be similar to that of department head. His major responsibilities would be to coordinate, supervise, and perform the administrative

functions of the activities involved in this division.

The administration should make provisions for, and encourage staff members to visit and study public schools in the state and nearby colleges and universities. Budgetary modifications and sufficient time allotments should be provided for visits and studies.

Another apparent need in the area of organization and administration was adequate clerical assistance for staff members. The staff should be provided with sufficient clerical help to facilitate course planning, preparation of instructional materials, and the meeting of necessary correspondence obligations. The number of additional secretaries needed should be determined by the administrator in cooperation with his staff.

The administration and staff should become more alert to the need for new courses and the need for revising old courses. In this era of rapidly changing times, needs in industrial education are continuously changing with the changing needs of society and industry. Industrial arts teacher educators should make every effort to keep abreast with the industrial advances in materials, tools, and processes for the purpose of adequately preparing future teachers for the tasks of tomorrow. An improvement in staff members' alertness for needed changes in the program may be attained through encouragement by the administration.

The School of Industrial Education should develop the practice of continual self-examination for the purpose of improving all phases of the total program. This would require organizing study committees for the various facets of the program. The industrial arts division could use the standards and criteria developed by the American Council on Industrial Arts Teacher Education as a basis for self-study.

Student Personnel Program

Clemson College. Evaluation results indicated that more aspects of the student personnel program were unsatisfactory than satisfactory. An analysis of the findings of this part of the evaluation suggests several activities which would strengthen this phase of the industrial arts teacher education program at Clemson College.

The Industrial Education Department most urgently needs to begin direct student recruitment activities. The present enrollment was entirely too low to provide a sufficient number of industrial arts teachers to meet the public high school demands. An immediate increase in enrollment may be obtained through effective use of recruitment activities. Some of the activities in which the department should participate are as follows:

1. The department should develop an attractive brochure which could be used with the recruitment program of the institution.

2. The departmental staff should make an effort to visit as many active industrial arts teachers as possible and to develop a relationship in which reciprocal assistance could be given. These high school teachers could be one of the most effective recruiting agencies for the department.

3. The department should periodically send a newsletter to all industrial arts teachers in the state. This would help renew the bonds between the teacher and the department of Industrial Education. Requests could be made for assistance in recruiting prospective students.

4. The department should send each high school counselor a packet which would include complete information about the Industrial Education program at Clemson.

5. The department should take part in an effective orientation program.

6. The departmental staff should work closely with the college freshmen counselors.

7. The department should develop criteria for use in selecting students for the program. Admission to the institution should not be the sole consideration for admission to industrial arts teacher education.

The student personnel program needs improvement in the area of counseling services. At the time of the evaluation the industrial education division had only one full-time faculty member. There should be three or four staff

members to share the counseling responsibilities. These staff members should exhibit an attitude of permissiveness in relation to the counseling services which they render. Generally, students will not seek assistance from professors who display an attitude of disinterest or non-permissiveness.

An effort should be made to develop a departmental library which would readily provide students with technical and professional references. With proper support and encouragement, the student club could assist with the development and maintenance of this library. Students should be encouraged to assume departmental responsibilities such as maintaining bulletin boards, library, and instructional aids.

A file of cumulative information about each student majoring in industrial education should be maintained by the department. The Registrar's Office maintains the official cumulative record file on each student, but this does not always contain the information desired by the department nor is it conveniently located.

The department should make periodic follow-up studies of graduates of industrial education. A cumulative file containing the permanent address of each graduate would make this task much easier. Follow-up studies would provide the department with information which could be most

valuable in directing future changes in the program. It is essential that the department utilize every possible resource in developing plans for the future.

The department should provide for continual evaluation of each student accepted as a major. The staff is frequently requested to recommend graduates for teaching positions, not only in public schools, but in industry and colleges. If these recommendations are to be of any value they should be based upon continual evaluation of the student's performance over a period of time.

South Carolina State College. An evaluation of the student personnel program in the School of Industrial Education revealed several inadequacies, most of which needed immediate attention. A committee should be appointed to study this phase of the program for the purpose of providing recommendations for improvement.

The School of Industrial Education should begin a program of direct student recruitment activities. Some of these activities should include: (1) the use of attractive and effective brochures, (2) obtaining the assistance of high school industrial arts teachers in identifying potential students, (3) cooperating with organizations which assist youth in selecting vocations, (4) participation in the college orientation and guidance program, and (5) selecting students for admission on the basis of written

criteria which are designed to identify those who are best qualified. Participation in these activities should alleviate the problem of decreasing student enrollment.

The administration and staff should encourage and support students in organizing a club exclusively for industrial arts majors. Through this club students could assume departmental responsibilities such as maintaining bulletin boards, libraries, and instructional aids. Club activities could provide the student with experiences which are invaluable in their educational and professional growth.

The school should develop an effective program for releasing news and information to students and graduates. A periodic newsletter mailed to industrial arts teachers of the state could assist in the student recruitment program. A weekly bulletin could provide an excellent means for the dissemination of news and information to campus students. This bulletin could be posted on bulletin boards throughout the school if budget funds were not sufficient to provide for individual distribution.

Typing and duplicating equipment should be provided for student use and operation. In addition to learning how to operate this equipment, the student should learn and use the most effective methods of preparing instructional materials and class reports or assignments. The College Typing Center does not provide the student with these essential learning experiences.

The school should engage in an effective follow-up program, which would include such activities as visiting each graduate at least once during his first year on the job, assisting graduates with problems, and conducting periodic follow-up studies on graduates. An effective follow-up program could provide invaluable information for improving the organization and administration, the student personnel program, the curriculum, the student teaching program, and the facilities.

The Faculty

Clemson College. Members of the administrative staff and those teaching professional courses for industrial arts teachers should have an earned doctor's degree. Each member of the industrial education staff should have at least a master's degree in education with a specialty in industrial arts or industrial education.

Industrial arts teachers who have demonstrated high degrees of competency in secondary school teaching and meet required standards for college teachers should be invited to serve as special instructors whenever feasible. These teachers should assist with the summer program for industrial arts teachers who are interested in professional improvement. Undergraduate students could profit immensely by taking courses under these experienced industrial arts teachers.

South Carolina State College. The Dean of the School of Industrial Education had an Ed.D. degree, one faculty member had a M.S. degree, and each of the other faculty members had a B.S. degree. The administration should continue to encourage the staff to obtain at least a M.S. degree in their area of specialization. Those responsible for teaching professional courses for industrial arts teachers should have an earned doctor's degree. An effort should be made to attain these standards.

The School of Industrial Education should utilize the services of industrial arts teachers who have demonstrated high degrees of competency in secondary school teaching and meet required standards for college teachers. These teachers should be invited to serve as special instructors whenever feasible. They could teach special courses during the summer program or serve as visiting instructors while members of the staff are pursuing full-time graduate work.

The Curriculum

Clemson College. The industrial education curriculum at Clemson College was designed to provide the student with a broad variety of experiences in four different schools. About thirty-five semester hours of required industrial education subject matter courses were taught by departments in other schools. Industrial education majors

were required to take only twelve hours of course work in the industrial education division. However, they were allowed to select twenty-one hours of approved electives, six of which must be in history. With the present organizational structure of the industrial education division, this curriculum was possibly the greatest strength in the total program. The student's experiences would be entirely too narrow if one professor attempted to teach all of the industrial education subject matter courses.

The reorganization mentioned in an earlier section of this chapter would require certain curriculum changes. One of the major changes would be to develop a curriculum for each of the specialization areas. Each curriculum should be sufficiently flexible to allow for student individual differences, goals, and purposes; yet, it should be sufficiently rigid to provide students with the opportunity to gain theories, knowledge, and skills needed in acquiring the desired competencies.

The industrial arts teacher education curriculum should be composed of three major divisions--general education, professional education, and industrial arts subject matter preparation. The industrial education staff should investigate the general education division for the purpose of making future curriculum changes. Presently, general education courses (humanities, social science, communications, mathematics, science, and similar courses) occupy

about one-half of the student's time. As changes are made in the professional education division and in the industrial arts subject matter preparation area, adjustments may be required in the general education division.

The learning experiences in the professional education division should be designed to develop the student's understanding of education and to develop the professional competencies necessary for a successful teacher. Included should be such courses as philosophy, educational psychology, school administration, and the broad area of methods. An investigation of the education and industrial education curricula revealed that courses in philosophy and school administration were not offered on the undergraduate level. The graduate program included two courses which combined philosophy with the history of education and industrial education. These were the only philosophy courses offered in the entire college curriculum.

The department of Industrial Education should offer undergraduate courses in guidance, philosophy, and public school administration. Courses of this type are essential in providing a desirable professional education for prospective teachers.

The industrial arts teacher should be qualified as a teacher and as a craftsman. As a teacher he should have the general and professional education required of all other

teachers. As a craftsman he should possess the mechanical skill required to demonstrate all of the craft and mechanical skills he expects students to learn. He may acquire these skills by taking courses in the industrial arts subject matter area of an efficient teacher education program.

The Clemson Industrial Education Department provided only two courses which were considered a part of the industrial arts subject matter area. All other industrial arts subject matter courses were provided by various departments throughout the college. It is desirable for other departments to offer some of these courses but the Industrial Education Department should provide most of them. Courses which furnish experiences in the foundations, theories, and methods necessary for successful teaching should be a function of the department.

The staff should develop and maintain proficiency tests in each of the major areas of industrial arts for the purpose of identifying students whose levels of achievement are beyond that required by the basic courses of those areas. The program of these students should be adjusted to provide a more advanced phase of study in the area concerned. Authorization for this type of program adjustment should be included in the written departmental policies.

Curriculum development is a continual process and should be approached from that point of view. The

department should strive for curriculum changes which would better prepare the industrial arts teacher to cope with the problems of our changing industry and society. High school teachers should be prepared to perform adequately the tasks currently demanded and also to perform in an acceptable way five, ten, or more years in the future. This means that the college staff should be making studies which present an intelligent prediction of how the future teacher must be prepared. If teacher education programs wait until society demands changes it is too late. By the time changes are made and their effects realized, new changes will be in demand.

The state-wide survey of industrial arts programs revealed that almost one-half of the teachers were not making an effort toward professional improvement. This may be due to the unavailability of industrial arts courses, because Clemson did not provide an extension or evening school for these teachers. However, there were some late afternoon classes which served teachers in the immediate locale but were not desirable for those who live further than convenient commuting distances from the campus. The Industrial Education Department should consider seriously offering an evening program to provide courses for in-service industrial arts teachers who live within reasonable commuting distances of the college. This would give about one-fourth of the state's teachers an opportunity for professional improvement.

The summer program presently offered for industrial arts teachers apparently emphasized vocational education. The program should provide industrial arts courses for industrial arts teachers and vocational courses for trade and industries teachers. In most of the courses, the subject content should be revised and brought up-to-date.

The area of curriculum should be placed under continuous scrutiny by the departmental staff for the purpose of planning and developing curricula which would meet the demands of changing times. If the objective of this program is to prepare students adequately for successful teaching of industrial arts in the state's public schools, it is essential that those responsible for planning the curriculum be cognizant of the current needs, as well as possible future needs, of teachers, students, and industry in South Carolina and surrounding states.

South Carolina State College. The industrial arts education curriculum at South Carolina State College appeared to maintain an excellent balance of course work in the three major groups of educational experiences-- general education, professional education, and industrial arts subject matter preparation. However, the staff should continuously re-examine all phases of the curriculum in an effort to improve the industrial arts teacher education program.

Proficiency tests should be developed for each of the major industrial arts subject matter areas and administered to students who have industrial experience. If students are sufficiently proficient in an industrial arts skill, adjustments should be made in their programs to permit them to take advanced courses rather than basic courses. The tests, developed by the staff, and the authorization for tests utilization should be included in the written policies of the School of Industrial Education.

The industrial arts education curriculum should provide for learning experiences which lead to an understanding of good guidance principles. These experiences could be integrated into almost any industrial arts course, or a course such as "guidance in the industrial arts shop" could become a part of the required curriculum. The observation of teaching and student teaching activities provide excellent opportunities for students to gain understandings of good principles if properly utilized.

The Industrial Education staff should strive to keep abreast with the changes in materials, tools, and processes which are being developed by industry. As these changes become established, the curriculum should be modified to include all of those which are applicable to the industrial arts program. Information about these changes may be gleaned from trade journals, professional magazines, and industrial

reports. Visits to industrial plants will provide a more direct method of gaining first-hand information about specific industries.

Consideration should be given to the possibility of organizing an evening program of courses for industrial arts teachers in surrounding areas. Most industrial arts teachers in South Carolina need courses which are designed to improve professional and technical competence.

Student Teaching

Clemson College. The standards for industrial arts teacher education programs specify that student teaching should be performed in an accredited public school and under the direction of a critic teacher who possesses at least a master's degree and who has successfully taught industrial arts. The school and the critic teacher should be selected on the basis of definite criteria developed by the department. Although the school in which student teaching assignments were made was an accredited public high school, it was apparently selected on the basis of convenience and was not providing the student teacher with the most desirable experiences.

The Clemson Industrial Education Department should establish written criteria which would manifest the most suitable public schools in which student teachers could

attain this valuable part of their educational experiences. These criteria should include such factors as availability of qualified critic teachers, variety of industrial arts activities offered, adequacy of equipment and facilities, and cooperativeness of the school administrators, teachers, and students. There may not be a sufficient number of desirable schools within the immediate area (five-mile radius), but some schools within a twenty-five-mile radius could definitely qualify and absorb the demands of an expanded program of student teaching. The departmental staff should amend the student teaching program to permit the selection of better qualified schools and critic teachers, even though the revision may require students to live off the campus during their student teaching assignment.

The teacher education program should provide for student observation of proper teaching practices in public schools prior to actually assuming student teaching responsibilities. This observation should be for a period of about two weeks and at the school in which the student is to be assigned for student teaching. The student also would have an opportunity to become acquainted with the critic teacher and the public school students.

The student teacher should have an opportunity to teach both junior and senior high school students in a variety of industrial arts subjects. Presently the Clemson

student teachers did not have this opportunity, but the proper selection of schools as mentioned above would provide a variety of industrial arts subjects to be taught.

The supervision and guidance provided for student teachers was rated unsatisfactory in the evaluation. The total student teaching program was the responsibility of one professor who also had an average teaching load. Apparently, unavoidable sacrifices were made in the quality of student teaching supervision and guidance. These responsibilities should be shared by other staff members and the quality of supervision and guidance should be improved.

The Industrial Education Department should consider implementing revisions in the student teaching program based upon an accepted set of standards. It would be advisable to request assistance from the State Department of Education in order to provide a program which would be compatible with existing state regulations, or, if necessary, to change regulations to permit the type of program needed.

South Carolina State College. Industrial arts student teaching was conducted in the school's general shop with pupils from the campus laboratory elementary school. The industrial arts major professor, acting as critic teacher, maintained close supervision of student teachers. The laboratory school method appeared to be utilized to its best advantage in the student teaching program. However,

it did not provide the full measure of experiences which teachers gain from teaching in public schools.

The School of Industrial Education should study the possibilities of implementing a student teaching program which would place prospective teachers in accredited public schools within the state. These schools should be selected on the basis of definite criteria which include such factors as: (1) availability of qualified critic teachers, (2) variety in industrial arts activities offered, (3) adequacy of equipment and facilities, and (4) cooperativeness of school administrators, teachers, and students. The critic teacher should possess at least a master's degree and successful industrial arts teaching experience. He should be willing to work cooperatively with student teachers and the major professor.

Student teaching should be performed in different subject areas, such as drafting, metal working, and wood-working. It should provide for experiences with the general shop type of organization in both junior and senior high school classes.

The program should make provisions for student teachers to participate in all of the activities expected of fully qualified industrial arts teachers, including planning, evaluation, maintenance, and extra-curricular activities. Some of these activities may be simulated in the

laboratory school, but the actual activities can be experienced in a student teaching program in the public school.

Facilities and Laboratories

Clemson College. Generally, the industrial arts facilities, and laboratories within the college, were most satisfactory, but those maintained by the industrial education division were inadequate to provide the experiences needed by future teachers. A discussion of some of the major changes needed to improve this phase of the teacher education program is presented in this section.

The Department of Industrial Education should acquire the woodshop facilities and laboratory from the Industrial Engineering Department. In addition to offering a complete woodworking program for industrial arts students, this shop could provide service courses for students in other schools of the College. The two professors who were responsible for teaching woodworking courses should become members of the industrial education staff and assume their share of the responsibility for planning and developing an improved industrial arts teacher education program.

About two thousand square feet of additional space is needed for the comprehensive general shop which the industrial education division presently maintains. After obtaining the additional space, the shop layout should be

re-planned in accordance with modern shop planning practices. Some of the features which should receive priority in planning the layout are as follows:

1. Laboratory planning should start with a consideration of the curriculum, including the objectives of the industrial arts program.

2. The nature of the activities and the equipment provided in the shop should depend upon the nature of activities to be taught in the public schools.

3. Equipment should be arranged to provide maximum safety precautions.

4. The shop should have adequate space for tool storage in the most efficient locations.

5. Space should be provided for materials storage and student projects storage.

6. Provisions should be made for conducting such teaching activities as student-teacher planning, conferences, and demonstrations, including motion pictures and other visual aids.

7. The shop should contain display cases, bulletin boards, and library reference materials.

8. The shop should provide an optimum physical environment.

9. Equipment and facilities should be provided in accordance with the curriculum requirements.

Provisions should be made for such utilities as water, gas, compressed air, electric outlets, and drainage of waste disposal in the comprehensive shop. A washing station, with hot water, should be provided for every five students in the laboratory. Acceptable housekeeping regulations should be developed and enforced by the students and teachers using the shop. All of these must be related to the total program and should be taken into consideration during the planning stages of shop layout improvement.

South Carolina State College. The School of Industrial Education provided an excellent variety of machines, tools, and processes for the industrial arts teacher education program. However, staff members should be alert to the need for changes in the facilities and should introduce new materials and equipment to replace the outdated.

A library of professional and technical materials should be established in the School of Industrial Education to provide students with easily accessible references. These materials should be adequate and current for all areas of instruction offered by the school. Students could assume the responsibility of maintaining the library, as well as maintaining the bulletin boards throughout the school.

Safety practices should be closely examined and precautions taken to prevent possible accident. Some of the items in the School of Industrial Education which needed immediate attention were:

1. Safety guards, shields, and protective clothing and equipment should be provided with all machines, tools, or processes which require safeguards.

2. Color coding, as recommended by the National Safety Council, should be employed in all shops. Students should be taught the meaning and importance of the color code and learn to respect it.

3. Protection against fire should be provided in all areas of instruction. This will require additional fire extinguishers throughout all shops, and extra precautions must be taken in storage areas for inflammable materials.

4. A first aid kit should be available in each shop. Periodic inspection and replenishment is necessary to maintain desirable and sterile first aid supplies.

In order to provide an environment which is both safe and conducive to learning, several major improvements should be made in the physical plant facilities. Immediate attention should be given to installing a dust collection system in the woodshop and a ventilation system in the auto mechanics shop. These two items should be among the priority expenditures on physical plant improvements.

The masonry laboratory was another area which needed major improvement. The building presently being used was too small, had inadequate lighting, had poor heating, and did not

have forced ventilation. The School of Industrial Education should either construct a new building or completely remodel the old one. If a new building is to be constructed, consideration should be given to planning a structure which would serve several other shop activities such as the home mechanics shop, the comprehensive general shop, and the welding shop.

The comprehensive general shop building did not contain sufficient floor space to provide an adequate variety of industrial arts activities. Consideration should be given to planning an addition to the present building, or as aforementioned, planning a new building which would accommodate this and several other shops.

The paint room or finishing room now being used by the comprehensive general shop was most unsatisfactory. If additional space cannot be acquired for this shop, the present finishing room should be remodeled as soon as feasible. The woodshop should build a new finishing room also. Those responsible for planning shop improvements should coordinate their notions with modern shop planning practices.

All shops should reorganize their systems and facilities for the storage of tools, materials, and supplies. The most popular method for storing tools is the completely open panel near the area in which the tools are to be used.

However, the final decision as to what type of storage should be used will depend on such factors as:

1. The types of activities to be carried on in the room.
2. The size of classes to be accommodated.
3. The type of personnel organization to be developed and used.
4. The extent to which the loss of tools is an important factor.
5. The janitorial and maintenance force problem.
6. The educational philosophy and methods of the instructor.

Reliable information about facilities for the storage of tools, materials, and supplies may be gathered from any of several recent school shop planning manuals.

Most of the industrial education shops needed additional washing facilities, drinking fountains, and student lockers. A washing station should be provided for every five students in such laboratories as wood, metal, and masonry. Hot water should be available in all laboratories.

Student lockers are necessary for the storage of partially finished projects, unused individual supplies, and student personal belongings. Each shop should have a sufficient number of lockers to serve the enrollment in that area.

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APPENDIX

Box 8557
University of Tennessee
Knoxville, Tennessee
September 23, 1960

Dear Principal:

As a member of the Clemson Agricultural College Faculty and a doctoral candidate at the University of Tennessee, I am conducting a study of Industrial Arts Teacher Education in South Carolina. This study is concerned with the possible improvement of the Industrial Arts Teacher Education Program at Clemson, and in other state supported colleges in South Carolina. As a result of this study it is hoped that an improved Industrial Arts Teacher Education Program might be provided.

Certain information pertaining to the Industrial Arts programs in the public schools of South Carolina is needed from each high school and junior high school principal in the state. The attached questionnaire, when completed by you, will contain essential data for a very important phase of the study.

Several copies of a questionnaire for Industrial Arts teachers are also enclosed. Please have each of your Industrial Arts teachers complete the questionnaire. Both principal's and teachers' questionnaires may be returned in the enclosed self-addressed envelope. If your school does not offer Industrial Arts, please discard the questionnaire for Industrial Arts teachers.

If you wish to receive a summary of this study please make request on the questionnaire and give your complete address.

Your cooperation in completing and returning this questionnaire as soon as possible will be greatly appreciated.

Sincerely yours,

AFN/rp

Alfred F. Newton

QUESTIONNAIRE FOR SCHOOL PRINCIPALS

I. Name of School _____ County _____

Current Enrollment (grades 7-12) _____

II. Is your school providing courses in industrial arts?
Yes _____ No _____.

1. How many boys are enrolled in industrial arts? _____
Girls _____.

2. What Industrial arts activities are offered in your school? Check Below:

	Year				Year		
	I	II	III		I	II	III
General Shop	_____	_____	_____	General Metals	_____	_____	_____
Woodworking	_____	_____	_____	Electrical	_____	_____	_____
Machine Shop	_____	_____	_____	Ceramics	_____	_____	_____
Automotive	_____	_____	_____	Plastics	_____	_____	_____
Graphic Arts	_____	_____	_____	Textiles	_____	_____	_____
Drawing	_____	_____	_____				
Other (specify) _____							

3. In what grade(s) is industrial arts taught? Check Below:

7th _____	10th _____
8th _____	11th _____
9th _____	12th _____

III. If your school does not provide courses in industrial arts please answer the following questions:

1. Why are industrial arts courses not offered in your school? Check Below:

_____ Students of this community do not need industrial arts.
 _____ Can not obtain qualified industrial arts teacher(s).
 _____ Other reasons (specify) _____

2. Does your school plan to initiate an industrial arts program in the near future? Yes _____. No _____.

IV. Do you have facilities for industrial arts which are not utilized for teaching industrial arts? Yes _____. No _____.

1. If the answer to number IV is "yes," why are these facilities not being used? Check Below:

- ☐ Qualified industrial arts teacher not available
☐ Industrial arts is not needed in this school
☐ Because of financial difficulties the program was discontinued
☐ Other reasons (specify) _____

2. What industrial arts facilities do you have, but are not using in the industrial arts program? Check Below:

General Shop _____	Machine Shop _____	Ceramics _____
Electrical _____	Plastics _____	Graphic Arts _____
Automotive _____	Drawing _____	Textiles _____
General Metals _____	Woodworking _____	
Other (specify) _____		

3. Are you planning to reinstate industrial arts in the near future? Yes _____ No _____.

V. Industrial arts teachers employed in your school during the past five years:

School year	Total Number of		Number of Teachers Employed for First Time in Your School		No. of Teachers Without Previous Teaching Experience	
	Full- Time Teachers	Part- Time Teachers	Full T.	Part T.	Full T.	Part T.
1956-57						
1957-58						
1958-59						
1960-61						

VI. How many different industrial arts teachers did your school employ during the past five years (1955-60)? _____

VII. How many new industrial arts teachers do you anticipate your school will need next year (1961-62)? _____.

VIII. What are the plans of your school for the industrial arts program during the next three to five years? Check Below:

- ☐ Continue with the same program
☐ Discontinue the entire program
☐ Increase the enrollment and employ (one) (two) (three) new teacher(s)
☐ Other (specify) _____

QUESTIONNAIRE FOR INDUSTRIAL ARTS TEACHERS

1. Name _____
2. School _____ County _____
3. Educational Preparation:

College Degree Earned	Institution and Location	Date of Degree	Major	Minor(s)
None (check)				
BS				
MS				
EdD				
PhD				

4. If you did not major in industrial arts, how many credit-hours of college work did you take in industrial arts courses? Semester Hours _____? Quarter Hours _____?
5. Give your work history for the past fifteen years or since graduation from high school. Do Not include employment of a temporary nature, such as summer employment or part-time employment.

[illegible]

6. How many years have you taught:

industrial arts? _____

industrial arts in South Carolina? _____

industrial arts in present school? _____

in public schools? _____

7. What area(s) of industrial arts are you teaching? Check Below:

General Shop _____	Machine Shop _____	Ceramics _____
Electrical _____	Plastics _____	Graphic Arts _____
Automotive _____	Drawing _____	Textiles _____
General Metals _____	Woodworking _____	
Other (specify) _____		

8. Did you receive specialized college training (6 semester hours or 9 quarter hours) in all of the areas in which you are now teaching? Yes _____ No _____. If the answer is "No," please list the areas in which you are teaching but did not receive specialized instruction. _____

9. Are you working toward a higher college degree? Yes _____ No _____. If the answer is "No," are you enrolled in course work for professional improvement? Yes _____ No _____.

10. Please give your present teaching schedule on the form below:

Period		Monday	Tuesday	Wednesday	Thursday	Friday
1st:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____
2nd:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____
3rd:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____
4th:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____
5th:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____
6th:	Subject Taught	_____	_____	_____	_____	_____
	No. of Students	_____	_____	_____	_____	_____
	Grade Level(s)	_____	_____	_____	_____	_____

11. Give the length of classes in minutes. Academic _____
Industrial Arts _____.

October 12, 1960

Dear Principal:

Recently you and other high school principals in South Carolina were mailed a questionnaire requesting certain information about your school and industrial arts program. Many of these questionnaires have been completed and returned.

I am now compiling the results of the questionnaires and hope that you will submit information about your school in time to be included.

Thank you very much.

Sincerely,

Alfred F. Newton

EVALUATIVE CRITERIA FOR UNDERGRADUATE PREPARATION OF
INDUSTRIAL ARTS TEACHERS

Area I - Purpose, Organization, and Administration

Part I - Descriptive Information

1. What is the "Service Area" of the department?
 - a. Attach a map on which a circle or polygon has been drawn to encircle 75 per cent of last year's graduates which are now teaching industrial arts. If the department graduated less than thirty industrial arts teachers during the past year, locate 75 per cent of the graduates for the past two years.
 - b. How many industrial arts positions will be open in the service area during this year? _____
 - c. How many industrial arts teachers will the department graduate this year? _____
 - d. How many industrial arts teachers did the department graduate last year? _____
 - e. How many of those graduates are now teaching industrial arts? _____
 - f. How many students planning to graduate this year are already teaching with a special certificate? _____
 - g. Is the "Service Area" increasing, diminishing, or remaining constant in size? _____
2. If the department is failing to meet the needs of the service area what is the annual increase in enrollment? _____ per cent Enrollment last year _____ Enrollment this year _____.
3. Attach a description of courses that have been added to the industrial arts teacher education curriculum during the past three years.
4. Attach a description of courses that have been dropped from the industrial arts education curriculum during the past three years.

5. How often does the department hold meetings at which all members of the department are present? _____
Attach a copy of the minutes of the last meeting. If minutes are not kept explain why. _____
6. What agencies or committees cooperate in planning experiences for industrial arts majors?
 _____ College curriculum committees
 _____ State certification officials
 _____ State curriculum committees
 _____ Public schools
 _____ Others _____
7. How many industrial arts staff members have attended a state meeting of one of the industrial arts professional organizations during the past year? _____
8. How many industrial arts staff members have attended a national meeting of one of the industrial arts professional organizations during the past five years? _____
9. What amount of time is reserved in the weekly schedule of staff members for course planning, preparation of instructional materials, research, and correspondence?

10. What opportunities are available for staff members to visit other schools? _____
11. What special services does the program provide such as adult education courses or service courses for majors from other departments? _____
12. Are demands made of the department, such as maintenance of institutional equipment, in such amount as to be detrimental to the instructional program?

Rating Scale

- | | |
|------|---|
| 0 | Item not present in this department, does not apply |
| 1- 2 | All or nearly all aspects unsatisfactory |
| 3- 4 | More aspects unsatisfactory than satisfactory |
| 5- 6 | More aspects satisfactory than unsatisfactory |
| 7- 8 | Most aspects satisfactory |
| 9-10 | Nearly all or all aspects satisfactory |

Rating

1. How successful is the department in establishing its purpose in terms of service area needs? _____
2. How adequate is the improvement in:
 - a. Variety of courses offered? _____
 - b. Departmental organization? _____
 - c. Departmental administration? _____
3. How successful is the department in:
 - a. Meeting needs of the service area? _____
 - b. Offering special courses? _____
 - c. Maintaining admission standards? _____
4. How alert is the department to the need for new courses? _____
5. How effectively has the department planned for future development of the program? _____
6. How satisfactorily has the department kept informed with new developments in industrial arts teacher education? _____
7. How adequate is the secretarial help for the department? _____
8. How satisfactory are provisions for visiting other schools? _____
9. How adequate is the time reserved for staff planning and/or research? _____
10. How effectively does the departmental staff function? _____
11. How adequate is the department budget? _____

Area II - Student Personnel Program

Part I - Descriptive Information

1. What recruitment activities are being conducted by the department?

- a. List the organizations with which the department co-operates in attracting qualified youth to the industrial arts teaching profession.
 - b. Attach samples of descriptive materials used for recruitment by the department.
 - c. From what sources does the department learn of potential candidates for the industrial arts teaching profession? _____
 - d. Attach a sample of materials used by the department as a part of its admission procedure.
2. Does the industrial arts staff serve as curriculum advisors for its majors? _____
 3. Identify and describe departmental clubs or organizations which are supported by the department. _____
 4. Is opportunity provided for students to help maintain departmental facilities such as bulletin boards, libraries, and instructional aids? _____
 5. How are students involved in evaluation of departmental courses and activities? _____
 6. How are former students involved in the evaluation of the activities of the department? _____
 7. Attach a copy of the departmental newsletter or publication used to disseminate information to students and graduates.
 8. Describe the typing and duplicating equipment available for student use. _____
 9. Attach samples of cumulative records maintained by the department.
 10. What percentage of the department graduates are placed in teaching positions through the college placement office?
 11. What percentage of last year's graduates have been visited by representatives from the department? _____
 12. How often are follow-up studies of the department graduates conducted? _____ Who plans and conducts the studies? _____
 13. What provisions are made for continual evaluation of active students to facilitate selective retention of candidates? _____

Part II - Evaluation

Rating

1. How adequate is the department recruitment program? _____
2. Are effective selection techniques used in admitting capable students into the teacher education curriculum? _____
3. Are adequate records and test results available to department counselors? _____
4. How satisfactory is the department counseling program? _____
5. Are department organizations or clubs well organized and supported? _____
6. How successfully do club activities stimulate professional growth? _____
7. Are opportunities provided for the more able students to assume leadership responsibility for departmental functions? _____
8. How enthusiastically do students assume leadership responsibility for departmental functions? _____
9. How efficient is the department technique for disseminating information to students? _____
10. Does the department make maximum use of newsletters by sending them to other staff and community members? _____
11. How adequate are facilities which encourage student use of typing and duplicating equipment required for thorough preparation for teaching? _____
12. How complete are departmental records concerning each major? _____
13. How effectively does the department utilize services of the college placement office? _____

Rating

14. To what extent does the department continue to assist majors after graduation? _____
15. How effective is the department follow-up program? _____
16. How effective is the department program of selective retention? _____

Area III - The Faculty

Part I - Descriptive Information

1. Does the teaching load of the industrial arts staff compare favorably with other faculty members in the institution? _____
2. In addition to "normal" non-teaching duties of a college faculty, are adequate provisions made for:
 _____ Maintenance of shop equipment
 _____ Inventory and acquisition of necessary supplies and tools
 _____ Performance of small maintenance requests from the institution
3. How often does the department use guest lecturers with backgrounds of highly successful teaching experiences?
 _____ How are they selected? _____

Rating

1. How satisfactorily is the work load of the industrial arts staff adjusted in relation to:
 a. Normal college non-teaching duties? _____
 b. Maintenance of shops? _____
 c. Inventory and acquisition of tools and supplies? _____
 d. Requests to perform services of a special nature for the institution? _____
2. How effectively does the department utilize services of outstanding teachers in the area? _____
3. How satisfactory is the technical competency of the total staff? _____

Rating

4. How rapidly are staff members working for advanced degrees or improvement in their technical competency? _____
5. How satisfactory is the quality of instruction given by graduate fellows or student assistants? _____

Area IV - Curriculum

Part I - Descriptive Information

1. Provide evidence that adequate emphasis is placed upon the value of general education courses for industrial arts majors.
2. Are industrial arts majors encouraged to begin their shop courses during their first year? _____
3. What industrial arts teaching specialties are students allowed to elect?

_____ General industrial arts	_____ General electricity
_____ General woodworking	_____ General drafting
_____ General metalworking	_____ Automotive
_____ General crafts	_____ Graphic arts
_____ Other _____	
4. Are students required to specialize in more than one subject? _____
5. How many semester hours are required for a teaching specialty in industrial arts? _____
6. How many semester hours are required for a major in industrial arts? _____
7. How many semester hours are required in professional industrial arts courses; such as methods and organization? _____
8. Present evidence that the department maintains a reasonable standard of workmanship in terms of: design, appropriate use of materials, quality of craftsmanship, and function. _____

9. List two or three techniques practiced in the department that provide opportunities for students to develop skill in guidance. _____
-

Part II - Evaluation

	<u>Rating</u>
1. How adequate is the variety of courses offered by the department?	_____
2. How effectively does the department introduce new processes and materials from industry?	_____
3. Are departmental graduates prepared to teach in more than one industrial arts subject?	_____
4. Do students achieve levels of skill in manipulative work?	_____
5. To what extent are students involved in group projects?	_____
6. How satisfactory are provisions for enriching experiences of students who are already competent in one of the usual industrial arts subjects?	_____
7. How effectively does the department demonstrate the importance of guidance?	
a. Through conduct of staff?	_____
b. Through opportunities for student participation of guidance activities?	_____
8. Is adequate emphasis placed on requirements for teaching specialties?	_____
9. Is adequate emphasis placed on:	
a. Professional industrial arts courses?	_____
b. Student teaching?	_____
c. Total requirements for a major in industrial arts?	_____
d. Development of manipulative skills?	_____
e. Principles of good design?	_____
f. Appropriate use of materials?	_____

Rating

10. How satisfactorily does the department prepare teachers for typical teaching positions in the service area? _____

Area V - Student Teaching

Part I - Descriptive Information

1. What percentage of the department majors are placed on student teaching assignments during their junior year?
_____ The senior year? _____
2. Does the college provide for observation of teaching practices before industrial arts majors are permitted to do student teaching? _____
3. What percentage of industrial arts student teaching is done under guidance of critics who hold at least a master's degree in education? _____
4. Are majors encouraged to do student teaching in both junior and senior high school classes? _____
5. Do majors teach in more than one subject, such as general drafting and general woodworking? _____
6. Attach a copy of the department criteria for admitting majors to the student teaching sequences.
7. Are student teachers encouraged to participate in all of the normal activities of an industrial arts teacher? _____
8. Does the department control the selection of schools in which student teaching is done? _____ How are the schools selected? _____
9. Who supervises the student teaching of industrial arts majors? _____

Part II - Evaluation

Rating

1. How adequately are students prepared for student teaching assignments? _____
2. How carefully are schools selected for student teaching assignments? _____

Rating

3. How satisfactory is the supervision of student teaching? _____
4. How adequate is the variety of activities experienced by the student teachers? _____
5. How adequate is the department criteria for admitting students to student teaching assignments? _____
6. Do student teachers receive sufficient guidance from the department? _____
7. How satisfactory are provisions for assisting student teachers with special problems arising from:
 - a. Technical qualifications? _____
 - b. Social relationships? _____
 - c. Professional relationships? _____
 - d. Special situations arising from human behavior? _____

Area VI - Facilities and Laboratories

Part I - Descriptive Information

1. What percentage of the departmental budget is allocated for acquisition of: Equipment _____ Supplies _____
2. What improvements in the department facilities and laboratories have been approved for this next year? _____
3. Attach a copy of last year's inventory, if available. If not available, explain how the inventory is kept. _____

Part II - Evaluation

Rating

1. How adequate are the offices and essential furniture? _____
2. How adequate are library materials for student use? _____

Rating

3. How satisfactory are the department teaching aids? _____
4. How satisfactory is the condition of classrooms and shops in terms of:
- a. Furniture? _____
 - b. Condition and variety of machines and tools? _____
 - c. Heating, lighting, and ventilation? _____
 - d. Identification of safety zones? _____
 - e. Housekeeping and general appearance? _____
 - f. First aid kits? _____
 - g. Number of exits? _____
 - h. Washing and drinking fountains? _____
 - i. Storage facilities? _____
 - j. Display cases and bulletin boards? _____
 - k. Finishing rooms? _____
 - l. Necessary utilities? _____
5. How effective is the procedure for obtaining necessary tools and supplies? _____