To determine if the industrial arts teachers of Texas need or want state-wide industrial arts supervision

Thesis

Presented to the Graduate Council of the North Texas State Teachers College in Partial Fulfillment of the Requirements

For the Degree of

Master of Science

By

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Gladewater, Texas

June, 1947
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>v</td>
</tr>
<tr>
<td>Chapter</td>
<td>INTRODUCTION</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td></td>
</tr>
<tr>
<td>The Meaning of Supervision and Need for the Study</td>
<td></td>
</tr>
<tr>
<td>Source of Data</td>
<td></td>
</tr>
<tr>
<td>Definition of Terms</td>
<td></td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td></td>
</tr>
<tr>
<td>Method of Procedure</td>
<td></td>
</tr>
<tr>
<td>II. THE WAYS IN WHICH A SUPERVISORY PROGRAM COULD AID THE INDUSTRIAL ARTS TEACHERS IN TEXAS</td>
<td>8</td>
</tr>
<tr>
<td>Coordination of Objectives</td>
<td></td>
</tr>
<tr>
<td>Standardizing Courses of Study</td>
<td></td>
</tr>
<tr>
<td>Orientation of New Teachers</td>
<td></td>
</tr>
<tr>
<td>Training Teachers in Service Leadership</td>
<td></td>
</tr>
<tr>
<td>III. METHODS BY WHICH THE PROPER SUPERVISOR-TEACHER RELATIONSHIP CAN BE ESTABLISHED</td>
<td>25</td>
</tr>
<tr>
<td>Cooperative Supervision</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Teaching and Curriculum</td>
<td></td>
</tr>
<tr>
<td>Utilization of Research</td>
<td></td>
</tr>
<tr>
<td>Teaching Aids</td>
<td></td>
</tr>
<tr>
<td>Inter-school Activities</td>
<td></td>
</tr>
<tr>
<td>IV. THE ATTITUDE OF INDUSTRIAL ARTS TEACHERS IN TEXAS TOWARD SUPERVISION AS SHOWN IN DATA FROM QUESTIONNAIRES</td>
<td>37</td>
</tr>
<tr>
<td>V. RECOMMENDATIONS AND SUGGESTIONS</td>
<td>59</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>62</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>68</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age and Teaching Experience in Industrial Arts of the Teachers in Group 1</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>Age and Teaching Experience in Industrial Arts of the Teachers in Group 2</td>
<td>41</td>
</tr>
<tr>
<td>3.</td>
<td>Age and Teaching Experience in Industrial Arts of the Teachers in Group 3</td>
<td>42</td>
</tr>
<tr>
<td>4.</td>
<td>The Attitude of the Industrial Arts Teachers in Groups 1, 2, and 3 on Supervision</td>
<td>43</td>
</tr>
<tr>
<td>5.</td>
<td>Objectives Which Were Used by the Older and More Experienced Industrial Arts Teachers, Group 1</td>
<td>47</td>
</tr>
<tr>
<td>6.</td>
<td>Objectives Which Were Used by the Industrial Arts Teachers in Group 2</td>
<td>48</td>
</tr>
<tr>
<td>7.</td>
<td>Objectives Which Were Used by the Industrial Arts Teachers in Group 3</td>
<td>49</td>
</tr>
<tr>
<td>8.</td>
<td>Attitude of the Teachers Toward a Supervisor's Ability to Aid Them in Realizing Objectives</td>
<td>50</td>
</tr>
<tr>
<td>9.</td>
<td>Attitude of the Industrial Arts Teachers Toward Types of Supervision</td>
<td>51</td>
</tr>
<tr>
<td>10.</td>
<td>Attitude of the More Experienced Teachers on Supervisory Practices</td>
<td>53</td>
</tr>
<tr>
<td>11.</td>
<td>Attitude of the Industrial Arts Teachers in Group 2 Toward Supervisory Practices</td>
<td>55</td>
</tr>
<tr>
<td>12.</td>
<td>Attitude of the Industrial Arts Teachers in Group 3 Toward Supervisory Practices</td>
<td>56</td>
</tr>
<tr>
<td>13.</td>
<td>Comparison of the Attitude of the Three Groups of Industrial Arts Teachers Toward the use of Objectives and Certain Supervisory Practices</td>
<td>57</td>
</tr>
</tbody>
</table>
**LIST OF ILLUSTRATIONS**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distribution of Returns of Industrial Arts Questionnaire Throughout Texas</td>
<td>38</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Purpose of the Study

Industrial Arts today is included in a majority of the large high school curricula, and most school administrators do not consider the school program well rounded unless such work is offered. However, the Industrial Arts teachers of Texas do not have the advantage of a supervisor in their field of work. Each school is an entity in itself. There is no concerted state-wide program, no link between widely diversified needs and situations, no one to advise the young teacher beginning his work, and no one to aid the more experienced teachers in different situations. The State Department of Education recommends a uniform course of study, but each teacher is free to use his own interpretation of what he should teach and what he should not teach. Educators, mindful of the beneficial results of supervision in other fields, have asked for a State Supervision of Industrial Arts, and provision has been made in the next school budget for such an official if the Legislature approves.¹ The purpose of this investigation is to determine, if possible, whether a supervisory program is needed or wanted by the Industrial Arts teachers of Texas.

¹Letter from L.A. Woods, State Superintendent of Public Instruction.
The Meaning of Supervision and Need for the Study

The fundamental philosophy of supervision is that it is a creative enterprise. It has for its object the development of a group of professional workers who attack their problems scientifically, free from the control of tradition, and actuated by the spirit of inquiry. Supervision endeavors to provide an environment in which men and women of high professional ideals may live a vigorous, intelligent, creative life.²

Some people think that the element of control in supervision should be emphasized. They think that some form of supervision is necessary to establish a degree of uniformity to help the students who move around from school to school to adjust themselves more readily to the new school systems. They further point out the necessity of including in the curriculum and courses of study things that will give certain experiences and aid the students to acquire certain skills which should be the common possession of all. They also recognize the importance of helping incompetent teachers, so that the students will not suffer from the teacher's lack of competence.

These requirements may be granted without destroying the fundamental obligation of supervision to provide for an intelligent and scientific attack upon the problems of teachers by those who are at work in the classrooms. All will acknowledge that there should be some form of control of the

²Department of Superintendence, N.E.A., Superintendent Surveys Supervision, p. 9.
science of education; otherwise the freedom given to teachers may be misinterpreted to mean that the teacher is free to practice things that might be injurious to children.

Aside from the needs of supervision, as outlined by specialists in the field, information on the need for supervision was sought from Texas teachers. Questionnaires were sent to the Industrial Arts teachers of the different teacher-training institutions in the State. Since these men are engaged in training teachers for teaching Industrial Arts, it was felt that they should be aware of the needs of the program. The following questions were asked each Director:

1. Do you think that a beginning teacher is in need of assistance to get a well rounded program set up in his individual situation? (Yes)___ (No)___

2. Do you think it is necessary to have state-wide supervision in order to be recognized as a professional field in the educational set-up? (Yes)___ (No)___

3. What type of supervision are you interested in:
(1) Academic Supervision, i.e., checking of notebooks and drawings as in the past ____________________________
(2) Participating Supervision, i.e., where your shop is given a clinical check-up to determine whether there may be some way to help, whether any irregularities exist, and where the irregularities are located________________________
(3) Please suggest any other type ______________________

Six questionnaires were sent to the teacher-training institutions, and it is indicative of the interest in the
subject that replies were received from each questionnaire within a week from the original mailing date. On question one, there were six affirmative replies: the beginning teacher does need supervision in setting up his program in his individual situation.

There was some diversity of opinion regarding question number two. Three of the Directors gave an unqualified "yes" as an answer. Two of them said that they think professional recognition has already been achieved and that state-wide supervision is unnecessary to achieve this. A third Director qualified his affirmative answer with the statement that the state-wide supervisor, to be effective, would have to be a proficient school man and not a state politician.

There were five unqualified affirmative answers to question three. One Director marked his answer "yes", but modified it to say that a supervisor "could be a handicap".

One Director answered that he is in favor of both Academic and Participating Supervision; four answered "yes" to Participating Supervision only; one Director did not answer either question; and one qualified an affirmative answer to Academic Supervision by stating that it should be for remedial purposes only.

The consensus of opinion of the Directors of the Industrial Arts Departments of the various teacher-training institutions in the state, then, is that state-wide supervision is both needed and necessary in accomplishing the objectives of the program. The unanimity of their decision, in the opinion of the investigator, substantiates the need for this study.
Source of Data

The study, as much as possible, is a factual one, and the majority of the material is taken from questionnaires sent to the Industrial Arts teachers in Texas high schools. However, literature in the field—books, bulletins, pamphlets, and magazine articles—has been utilized to establish and present the background study and the advantages and procedures of supervision.

Definition of Terms

**Supervision**—Webster's Dictionary defines the word "Supervision" as meaning "to inspect" or "to manage". However, that is not the meaning of the term "supervision" as used in this study. One Director, in answering his questionnaire, described a supervisor as a "friendly helper". In speaking of a supervisor, as visioned in this study, the writer means a highly trained Industrial Arts counselor who can be of aid through cooperative work with Industrial Arts teachers.

**Academic Supervision**—Academic supervision is the old inspectorial type of supervision. It consists of checking notebooks and drawings as has been the practice in the past.

**Participating Supervision**—Participating supervision exists when the shop is given a clinical check-up to determine whether there may be some way to help, whether any irregularities exist, and where the irregularities are located.
Industrial Arts--. Industrial Arts is one of the Practical Arts, a form of general or non-vocational education which provides learners with experiences, understandings, and appreciation of materials, tools, processes, and products and of the vocational conditions and requirements incident, generally, to the manufacturing and mechanical industries. These results are achieved through design and construction of useful products in laboratories or shops, appropriately staffed and equipped, supplemented by readings, investigations, discussions, films, visits, reports, and similar activities characteristic of youthful interests and aptitudes in things industrial. The program includes such industrial representations as drawing and design, metal work, wood work, textiles, printing, ceramics, automotives, foods, electricity and similar units, either as separate offerings or in various combinations.3

Manual Arts--. Manual Arts is a term used to describe such subjects as woodworking, mechanical drawing, metal work, printing, leather work, jewelry making, clay work, book-binding, and other related subjects, when taught as a form of general education having for its chief purpose the development within the pupil, through practice in the school shops with a variety of exercises and practical projects of personal value, of manual skill and an appreciation of good design and construction.4

4Ibid.
The difference between Industrial Arts and Manual Arts is that Industrial Arts emphasizes the all-round arts of industry rather than manipulative skills.

Limitations of the Study

This study is limited to the question of whether or not Texas Industrial Arts teachers need or desire a state-wide supervisor.

Method of Procedure

The investigation has been divided into five parts or chapters. Chapter I gives the purpose of the study, the need for such an undertaking, the source of data, the definition of terms, and an outline of the method of procedure.

Attention is given in Chapter II to the benefits to be obtained from an efficient state-wide supervisory program of Industrial Arts education. The methods whereby such a program may be set up and carried out form the subject matter of Chapter III.

In Chapter IV the results obtained from questionnaires sent out to Industrial Arts teachers in Texas are given. A questionnaire, which is included in the Appendix of the study, was sent out to one hundred and seventy Industrial Arts teachers in the state. The data obtained from the questionnaires which were answered are tabulated, and an analysis is made of their significance.

Chapter V gives the findings and the conclusions reached by the writer in the investigation.
CHAPTER II

THE WAYS IN WHICH A SUPERVISORY PROGRAM COULD AID THE INDUSTRIAL ARTS TEACHERS IN TEXAS

Texas is the largest state in the United States and comprises a greater variety of climate, topography, and occupations, perhaps, than any other state. A school which adequately meets the needs of the community in one region of the state may fail to meet the needs of another community with different interests.

The first manual training department in a Texas high school was established in 1896.¹ By 1906 the majority of the larger schools of the state had undertaken to establish courses in this work. It was soon found that the equipment and the training were expensive, and the work was limited to those systems with adequate finances. In 1917 the Federal government subsidized the teaching of vocational education in the United States through the enactment of the Smith-Hughes Act. The Texas Legislature accepted the provisions of the Act, and the State Department of Education outlined a course of study for Industrial Arts. The dominant

¹Frederick Eby, The Development of Education in Texas, p. 253.
aim of this course was "to give each pupil those Industrial Arts experiences that would most effectively serve him in his life situations". ²

The size of Texas and the complexity of its various occupations have taxed the ingenuity of teachers of Industrial Arts to adequately adjust their subject matter in the various sections of the state. The basic training for an Industrial Arts teacher includes metal work, woodwork, architectural and mechanical drawing, elementary electricity, and related subjects. On the other hand, a program of work in Industrial Arts in a high school should be so designed as to give the students a basis from which they may enter industry, or the professions, trades, and other technical fields. The successful teacher, if he is to meet the educational needs of his community, must have not only a general, but also a specific knowledge of his particular section of the state.

It has been felt by many that supervision of the Industrial Arts program by a qualified supervisor could be of inestimable help in coordinating the work of different schools, in standardizing the courses of study, and in improving teachers in service.

Coordination of Objectives

It is essential that each school offering Industrial Arts have a carefully formulated educational philosophy.

The school should be free to determine this philosophy for itself to the extent that it promotes the principles and spirit of American democracy. Each school should be able to justify any marked variations from generally accepted principles. In order to do this, each school should formulate a statement of objectives. These objectives should be consistent with the general philosophy of Industrial Education and should also meet the needs of the pupil population and the school community. The average Industrial Arts teacher in Texas does not always stop to study out a definite set of objectives in terms of local, state, and national objectives. This is the point at which a supervisor could be of worth-while aid, for there are definite objectives from various sources which need to be coordinated.

The State Department of Education of Texas states the guiding philosophy and objectives to be followed and achieved by the Industrial Arts teacher.

The dominant theme throughout each industrial arts course is to give each pupil those industrial arts experiences that will most effectively serve him in his life situations.

The guiding philosophy recommended for development of the individual in harmony with his fundamental needs and best interests are as follows:

1. Giving the pupil practical experience with construction materials and mechanical activities of this industrial period which will be useful in home, avocational, and vocational life.
2. Developing the habit of careful planning and methodical procedure in pursuing the manipulative and mental phases of industrial life.

3. Providing opportunity for developing knowledge related to tools, materials, processes, operations, and other industrial arts information useful to home, avocational, and vocational life.

4. Providing additional opportunities for guidance and the development of social habits and mental attitudes.

The following objectives of the course in Industrial Arts are listed:

1. To help pupils meet as effectively as possible life situations related to manufacturing, construction, and mechanical service industries of America by giving them controlled practical experiences with construction material.

2. To develop good habits in thinking and doing regarding tools, materials, processes, and operations for the purpose of making the pupils more independent in life.

3. To develop the individual in harmony with his fundamental needs and best interests.

The Industrial Arts teacher will have a greater appreciation of the aims of the State Department if he compares these aims with others expressed in the literature in this field. He will be better able to understand them and more capable of adapting and revising them to meet his own particular situation and needs.

Smith, in a study in 1944, set up the following objectives for Industrial Arts:

1. To develop skill in the use of common tools. For the home, avocational purposes and general preliminary information and social training.

2. To afford industrial information and social training. For a better understanding of materials and processes of manufacture, the economic and social value of labor and the conditions and problems of industrial employment.

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5 Ibid.
3. To foster appreciation of good materials and workmanship. To secure intelligent selections of manufactured products for home and business.

4. To further intelligent choices of life occupations. For wider knowledge of the requirements of Industrial jobs, to better understand individual capacities.

5. To inculcate worthy personal traits and attitudes. For acquiring habits that will help to bring success in life.

6. To provide a measure of specific occupational training.

A committee of national leaders in Industrial Arts Education made a study of the objectives of teaching Industrial Arts in 1944. The objectives set up by this committee have been recognized as basic foundations upon which any curriculum in industrial arts could be written. All that is needed to adapt a new program to current needs is to interpret these objectives in terms of those needs. The first objective set up provides explicitly for adapting it to specific needs and localities. It follows:

To develop an active interest in industrial life and in methods of production and distribution.

Under this general heading are listed eight specific outcomes for a teacher to seek in their own community. They are as follows:

1. He should concentrate on filling the needs of industry in his community, if possible.
2. He should call on local trades and manufacturers and co-ordinate his program so that the students will fit into the local scheme.
3. He should make a study of the raw materials in the local manufacturing set-up.
4. He should study the methods of distribution of local products.

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5. The working quality of materials in use should be analyzed.

6. Attention should be given to sizes, grades, classification, and sales units in common use.

7. Counseling and guidance meetings should be held once a month instead of once a year.

8. Advisory committees of laymen from trades and industries similar to the trade advisory committees for vocational education should be formed.

The other general objectives are listed as follows:

To develop the ability to select, care for, and use properly the thing he buys or uses.

To develop an appreciation of good workmanship and good design.

To develop an attitude of pride or interest in his ability to create useful things.

To develop in each pupil a feeling of self-reliance and confidence in his ability to deal with people and to care for himself in an unusual or unfamiliar situation.

To develop the habit of an orderly method of procedure in the performance of any task.

To develop the habit of self-discipline which requires one to do a thing when it should be done, whether it is a pleasant task or not.

To develop the habit of careful, thoughtful work without loitering or wasting time.

To develop an attitude of readiness to assist others when they need help, and to join in group undertakings.

To develop a thoughtful attitude in the matter of making things easy and pleasant for others.

To develop a knowledge and understanding of mechanical drawing, the interpretation of the conventions used in drawings and working diagrams, and the ability to express one's own ideas by means of drawings.

To develop elementary skills in the use of the more common tools and machines, and a knowledge of the methods of procedure in tasks frequently encountered by the average man together with a knowledge of the working qualities and characteristics of some of the most used materials.

To develop the ability to use the mathematics required in the various trades.

7 Charles P. Richardson, "A Reinterpretation of Industrial Arts Objectives", Industrial Arts and Vocational Education, II (February, 1944), 555.

8 Ibid., 555-558.
Standardizing Courses of Study

The progressive Industrial Arts teacher will evaluate the proposed program outlined by the State Department of Education in terms of these additional objectives and the recommended course of study. This course of study for Industrial Arts in secondary schools of Texas is:

Metalwork

Sheet Metal Division

The objectives of this unit are to achieve some junior skills beyond those experienced in the Laboratory of Industries in Sheet Metal, to acquire associated information related to the sheet metal occupations working with tin, galvanized iron, sheet iron, copper, zinc, or other sheet metals.

A. Processes

1. Layout
2. Cutting
3. Punching
4. Folding
5. Soldering (hard and soft)
6. Riveting
7. Forming
8. Grooving
9. Wiring
10. Setting down
11. Burring
12. Peening
13. Raising
14. Welding
15. Finishing
16. Brazing
17. Forging
18. Stretching

B. Technical knowledge

1. Solder and fluxes
2. Terminology
3. Care of tools and equipment
4. Sources of manufacture
5. Methods of manufacture
6. Sizes and gauges of sheet metal
7. Properties of sheet metal
8. Safety and hygiene
9. Finishes
10. Welding sheet metal
11. Sheet metal drafting
C. Occupational information

1. Building trades
2. Job shop
3. Manufacturing industries

D. Typical projects

1. Candy pan
2. Bread pan
3. Chimney tube
4. Scoop for floor
5. Elbow
6. Pitch top cover
7. Ash barrel

Machine Shop Division

The objectives of this unit are to achieve some junior skills in machine hand work and machine tool operations, to acquire technical knowledge, and to interpret occupational information related to machine shop practices in small and large shops, that will also be useful in home, avocational, and vocational life.

A. Processes

1. Laying out
2. Shearing
3. Forming
4. Chiseling (common)
5. Cutting
6. Filing
7. Centering
8. Squaring
9. Tapping
10. Threading with dies
11. Turning
12. Grinding
13. Drilling
14. Knurling
15. Chipping
16. Chiseling (special tools)
17. Scraping
18. Shaping

B. Technical knowledge

1. Cap screws
2. Machine screws
3. Set screws
4. Bolts
5. Rivets
6. Keys and keyways
7. Mild and cold rolled steel
8. Tool steel
9. Cast iron
10. Copper
11. Brass
12. Polishing and buffing
13. Finishing materials
14. Polishing materials
15. Cutting speeds
16. Hacksawing
17. Filing
18. Tap drill sizes
19. Drills and drilling
20. Threads
21. Safety and hygiene

C. Occupational information

1. Occupations within machinist's trade
2. Promotional lines
3. Relation to other occupations
4. Plumb bob
5. Mandrel for lathe
6. Tap wrench
7. Bolt and nut
8. Pipe center and shank
9. Steel screw driver
10. "C" clamp
11. Machinist's clamp
12. Clamp lathe dog
13. Small bench vise, 2 3/4-inch jaws
14. Cabinet maker's vise

Woodwork

Rough Carpentry

A. Processes to be achieved:

1. Measuring
2. Squaring

3. Framing with framing square
4. Sawing with cross cut and rip saw
5. Fastening with screws
6. Nailing with brads, commons and casings
7. Setting strap hinges
8. Leveling
9. Edge planing

B. Technical knowledge to be acquired:
   1. Framing square lumber table
   2. Framing square brace table
   3. Framing square rafter table
   4. Kinds and uses of saws
   5. Safety information
   6. Home makers information
   7. Use of level

C. Occupational information to be interpreted:
   1. Carpenters--Hours, pay, advancement
   2. Lumbering industries
   3. Lumber yard operators

Bench Work

A. Processes to be achieved:
   1. Planing
   2. Gauging
   3. Curved sawing
   4. Spoke shaving
   5. Chiseling
   6. Layout and cutting joints--Butt, lap and dado
   7. Scraping and sanding
   8. Finishing

B. Technical knowledge to be acquired:
   1. Kinds and uses of planes
   2. Kinds and uses of chisels
   3. Cabinet woods
   4. Finishing materials
   5. Joints and their application to cabinet work
C. Occupational information to be interpreted:

1. Cabinet makers--hours, pay, advancement
2. Furniture industries
3. Sash and door factories
4. General cabinet shops
5. How small industries grow into large industries

A comparison of this recommended course of study with its objectives and the standards set up in the literature of the field shows that there is a close correlation between the two. If there were some means of co-ordination, such as supervision, the Industrial Arts teachers could work more nearly in union in setting up and achieving objectives. For example, the original course of study for Manual Arts in Texas recommended that all students do the same basic type of work. Different objects might be made, but the fundamental operations do not differ. In the new course of study this is no longer required. One student may be given training in a certain operation, while another one may take something entirely different. A supervisor could be of inestimable value in co-ordinating differing viewpoints and aims along these lines.

One may also consider the situation as it exists in the state today. In the vocational fields of home economics and agriculture a definite program is outlined, and a supervisor from the State Department of Education is available to aid in teaching a standardized program in these subjects. But in the field of Industrial Arts there is no supervision to aid the teachers in setting up programs to fit individual needs.
For example, the same program would not be taught in Denton as in an oil field community. In Denton the program would be general because of lack of industry. The student would not be prepared for any specific trade or industry, but he would have the general foundation knowledge so that he might choose a trade, industry, hobby, or profession, and pursue that particular choice.

The work of a well-trained supervisor in co-ordinating and standardizing an Industrial Arts program could result in notable improvements. The Committee on Supervision of the National Education Association, which made a special study of supervision, has this to say:

Careful supervision will constantly set before the individuals concerned goals which are not too remote. The supervisor will propose, upon the basis of appreciation of work already done, problems to be solved and work to be accomplished which lie just beyond the ideal which the reader has set for himself.12

Orientation of New Teachers

Another function of a supervisor of an Industrial Arts program would be that of properly inducting new teachers into the profession. There are in our schools today many teachers without adequate preliminary training. Even those who come into the profession from the best professional schools have only a beginning knowledge, or skill, or insight, or devotion to the profession which they seek to enter. The supervisor can be of inestimable help in orientating these new teachers into the profession and aiding

12The Department of Superintendence, The Superintendent Surveys Supervision, p. 12.
them in their problems. The Committee on Supervision says:

Beginning teachers are apt to be harassed by the least important details of their work. They practice the art of teaching not infrequently out of an experience in the classrooms in which they were pupils. It is difficult for them to carry their philosophy of education or their knowledge of the science of teaching into their own classroom procedures. They become slaves to routine; they may not appreciate their own strength. Their professional life is dependent upon a sympathetic leader who guides, restricts, and stimulates them during their period of probation.\footnote{bid., p. 10.}

The major work of supervision, however, concerns itself with the growth of teachers in service. In teaching, one must not only know what to teach and how to teach it, but must also have skill in the performance of the teaching act itself. Many teachers who show ability in acquiring information about teaching prove incapable, for one reason or another, of mastering teaching technique. Many of these failures are due to defective personality, but many others are due to the inability of different individuals to translate knowledge of how to teach into teaching practice.

The supervisor fills a need in such a situation. He is expected to adjust teachers to the working environment. He leads them to real consideration of the pupils, of each other, of the community, and of the profession. The appropriateness of the materials of instruction, the effectiveness of their organization, the validity of the methods employed and the worth of the measurements of results are all of concern to him. As critic, coach, and counselor, he
stimulates the professional growth of teachers and is a decisive factor in determining the results of the training program.

Training Teachers in Service

Supervision is not limited to the new teachers in the program of teacher training. Teachers who have long been in the service just as certainly need adequate supervision as those who have recently entered the profession. All too often the experienced teacher becomes stale and loses the interest and enthusiasm with which he entered the work. The Committee on Supervision says:

Many men and women have entered the teaching profession with high enthusiasm, and lack the stimulus of high professional counsel and leadership. They have been overcome by routine. They have died professionally. What they needed was to bring to them from time to time the result of scientific inquiry, to stimulate them to undertake experiments, to send them out into the school system in which they teach to observe the successes of others, to encourage them to become students of their own profession. So long as men and women of high intelligence devote their lives to the profession of teaching, just so long will there be an opportunity for devoted leadership in the field of supervision.1

In the field of Industrial Education there is special need for the training of teachers in service. The personnel of the teaching force has shifted due to the many changes occasioned by World War II. A great many of the teachers left the profession to engage in more lucrative skilled trades during the war years and will not return. Many new

14 Ibid., p. 10.
teachers, with little or no practical experience other than that of the training school, have entered the system. The shortage of teachers has, in some instances, necessitated the recruiting from the trades of men who have no experience at teaching but who in other respects are qualified to make good teachers. Teachers come to one system from another, and are new to the policy, methods, and other conditions existing in this situation.

Then, too, Industrial Education involves both technical knowledge and skills. This is an age of technology, and experiments are constantly being made and improvements worked out. The supervisor keeps abreast of research in the field, carries on experiments and tries for uniformity in course values and in standards of accomplishment. He can, by good supervision, tie the entire Industrial Arts program of the Texas secondary schools together and make of it a unified whole. A unified program, functioning as an integer, will not only stimulate the growth of individual teachers and schools but also add greatly to the dignity and professional standing of the whole program.

After all, these things are the most important criteria for measuring the work of a teacher. It is not to be expected that all teachers will improve to the same extent or that all will achieve distinction, but if there has been proper supervision, it is to be expected that all teachers will have done better work and will have proven themselves ready to accept more responsibility. Possibly the most severe test
that can be applied to the work of a supervisor is the degree of excellence attained under his leadership by, not the least able, but the most gifted teachers under his leadership.

Leadership

Supervision implies something more than mere encouragement and help to the weaker members of the teaching profession. It is inspiration for the gifted and able ones as well. A professional spirit on the part of a supervisor will encourage a similar spirit on the part of those supervised. The Committee on Supervision says:

In the last analysis, the creative work of the supervisor will be measured by his devotion to the cause of education, expressed through productive scholarship and leadership. If his loyalty to this service controls his own activities, it will be found in the lives of those with whom he is associated. If he has given himself willingly and wholeheartedly to a study of the meaning of education in our society; if he is thoroughly conversant with the contributions of science to our profession, then he may ask for a like consecration upon the part of his colleagues. Great leadership is dependent upon social intelligence, professional scholarship, professional insight, and professional imagination. These are granted only to those who value the cause they serve above everything else. The supervisor may hope to provoke in the lives and work of his colleagues no greater understanding or enthusiasm or idealism than that which controls his own.

It is felt, then, that there are a number of ways in which a supervisory program could aid the Industrial Arts teachers in Texas in their work. These ways may be summarized as follows:

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15 Ibid., p. 13.
1. Supervision would help to co-ordinate the program over the entire state and aid in forming common objectives.

2. Supervision would aid the teacher in integrating special needs with the larger objectives as a whole.

3. Supervision could be of great benefit in the orientation of new teachers into the profession.

4. Supervision would provide a better opportunity for teachers to grow in training.

5. Supervision would be of great aid in standardizing procedures in all the schools of the state.

6. Supervision, if successful, would improve the work of the Industrial Arts teacher and would lend new dignity and professional standing to the subject.
CHAPTER III

METHODS BY WHICH THE PROPER SUPERVISOR-TEACHER
RELATIONSHIP CAN BE ESTABLISHED

The proper supervisor-teacher relationship is one of the most important points in any supervisory program. If the program is to be a success, the relationship must be the best possible for the good of the students, the school, and the community. The supervisor is expected to adjust teachers to the working environment. He leads them to a real consideration of the pupils, of each other, of the community, and of the profession. He could be referred to as a controlling and unifying influence, a correlating and integrating agency --a liaison officer. It is his duty to unite teacher, principal, and patron and build understanding between departmental workers and those of larger responsibility.¹

Cooperative Supervision

Such a relationship between teacher and supervisor has not always existed nor has such a relationship been the objective of the supervisory program at all times. Supervision today carries with it a prejudice that has developed out of traditional educational practices and philosophy. In the

¹William T. Bawden and Others, Industrial Arts in Modern Education, pp. 69-70.
past, and to some extent today, supervision has been interpreted according to its literal meaning. The supervisor was a person in a superior position whose duty was to inspect, to criticize, to find fault with, and to correct the activity of the teacher, the person in an inferior position. This was an undemocratic technique, and the teacher, in many instances, rightfully resented the supervisor and supervisory techniques of all kinds. That concept of supervision, at least in education, is being slowly discarded, and supervision is coming to be regarded as a special type of leadership.²

Cooperative supervision could be the name given to this new type of education. Such supervision stresses the harmonious working together of teachers, principals, and supervisors upon the problems of classroom instruction. It conflicts with the notion of supervision in which supervisors alone are permitted to see and solve problems, or in which supervisors hand down decisions to teachers and teachers to pupils. In cooperative supervision teachers, pupils, and supervisors alike are learners, working cooperatively side by side to improve the products of instruction. There is respect for personality, initiative, self-reliance, and responsibility. The intelligent participation of teachers, pupils, and supervisors alike in the development of educational policies are encouraged.³


³A.S. Barr, An Introduction to the Scientific Study of Classroom Supervision, p. 17.
The establishment of this feeling that supervision is not dictatorship but a cooperative effort to aid the teacher in solving his problem is the number one obstacle in any successful supervisory program. The extent to which this is accomplished will determine the degree of success that the work is to achieve.

A supervisor's chief responsibility is to help the teacher grow in professional effectiveness. Instead of the corrective type, supervision should be preventive, constructive, promotive, and creative. A great deal will depend upon the supervisor himself. Maxwell says:

The supervisor must have an ideal of an end which he wishes to accomplish, an ideal of the methods by which the goal will be best attained, and an idea of the obstacles which must be overcome in adjusting means to reach the end.4

The supervisor, too, must be familiar with the principles of supervision. Briggs has divided these principles into two categories: negative and positive. The negative ones are:

1. Supervision should, then, seldom if ever be arbitrary or authoritative.
2. Supervision should not be based on the power of position or of personality.
3. Supervision should never be divorced from a constant recognition of the goals of education.
4. Supervision should not, as a rule, be largely concerned with the details of subject matter or of instruction.
5. Supervision should not be concerned only with the immediate.
6. Supervision should never be nagging.
7. Supervision should not be impatient of result.5

4James H. Briggs, Improving Instruction, p. 2.
5Ibid., pp. 132-136.
A study of these negative principles will reveal that supervision has come a long way from the arbitrary, fault-finding, type which concerned itself with the smallest details of the classroom procedure. On the contrary, the principles which should dominate in supervision are as follows:

1. Supervision should be characterized by simplicity and informality.
2. Supervision should use only the simplest of machinery.
3. Supervision should begin with conditions and practices as they are.
4. Supervision should be adapted to the capacities, attitudes, and even prejudices of the teachers.
5. Supervision should be gradual, progressive, and persistent.
6. Supervision should be cumulative in its results.
7. Supervision should be scientific.
8. Supervision should be sympathetic and human.6

Perhaps an elaboration of each of the foregoing principles will bring out in greater detail the methods through which supervision may become effective. In the case of inspection, if the supervisor is to do effective work, he must gain some knowledge of the methods of classroom teaching, the equipment, the means of instruction, and many other details. There must be some measure of inspection, but this inspection must not be mere fault-finding. It should be wholesome, its purpose being to work out with the teacher ways and means of correcting any existing faults.

There is much information about individual schools that may be gained through use of standard tests, questionnaires, and various rating schemes. The true appraisement, however,

6 Ibid., p. 136.
is through individual study of each school—its good points, its weaknesses, its possibilities for improvement—by the supervisor working in cooperation with the teacher. The informal discussion will give both supervisor and teacher an opportunity to evaluate the program in general.

In a program of Industrial Arts supervision, one of the first things to be worked out is the objectives of the program. Barr says:

As one views the school system as a whole, he is impressed by the tremendous number of supervisors who merely supervise; teachers who merely teach; and pupils who merely study without any clear consciousness of the objectives of education. There is need for a clearer recognition on the part of supervisors and teachers, and, in a measure, on the part of pupils, of the goals to be attained by learning, teaching, and supervising. Not only is there need for a clearer discernment of the objectives of education by supervisors, teachers, and pupils, but there is need, also, for agreement among them as to the objectives to be attained. There is little such agreement at present. Educational progress might be much surer, much faster, and much more economically attained if there were less working at cross purposes and more agreement as to ends to be attained.\(^7\)

In supervision the supervisor must have the ability to build a convinced faith in sound principles of education and to unify these and apply them to particular situations. If he is to be successful, the teacher also must meet a number of requirements in order to receive the best aid from the supervisor. He should develop a philosophy of education, and he should develop, formulate, and consistently seek the indicated general objectives. Teachers easily recognize the

\(^7\)Barr, op. cit., p. 377.
soundness of this principle, but it is a difficult task to
induce them into a habit of seeking these objectives con-
sistently. There can be no good teaching unless the teacher
himself knows the goal toward which he is attempting to lead
the pupils. The value of objectives lies in what they lead
to after they themselves are mastered.

Formulation, then, of both general and specific objec-
tives is the province of both supervisor and principal.
Once this is accomplished, a program designed to meet these
objectives can be set up. This may be a general program
prepared to meet general objectives and a specific one for
individual localities and schools.

The initiative for planning procedures should come from
the teacher. The good supervisor knows how to tactfully
arouse the teacher's interest and investigation along certain
lines, but he leaves a great deal of the choice to the
teacher. The supervisor suggests and offers guidance, but
there should be no hint of coercion.

In this respect, teachers differ as to ability as well
as qualifications. Good supervision demands that the
instructor recognize this. He has the opportunity to search
out some special ability of the teacher and to utilize it.
In every school system in the United States, there are teachers
whose insight and possible achievement have been wasted
through lack of guidance.8 It is the obligation of the

8Department of Superintendence, The Superintendent
Surveys Supervision, p. 11.
supervisor to discover successful performance and discover undeveloped strength or skills.

Evaluation of Teaching and Curriculum

The efficacy of any program can not be estimated or evaluated unless there is some form of measurement. At the same time there must be some kind of a yardstick, some kind of a standard for such measurement. For example, in the Industrial Arts program one of the objectives is the acquisition of certain skills. One teacher in a specific school may measure skills by one standard, and another teacher in another school may use a different measurement. Education, if it is worth the name, does not seek to regiment pupils and make them all to the same pattern, but it is to the advantage of all the schools to have some definite objective or standard toward which to work.

The supervisor has an opportunity, as an emissary between schools and teachers, to set up such a standard and to measure the activities of the different schools. The progress of the program can be judged yearly through the survey method and tests. There are numerous devices which may be used in gathering data about the products of instruction: tests, rating scales, instrumental measuring devices, check lists, interviews, and various others. The good supervisor uses these devices to check the general progress, but he uses his own observation as well. The Committee on Supervision says:

Something of the emphasis to be placed upon creative supervision as compared with mere inspection
can be illustrated by the work which a good supervisor does in relation to the rating of teachers. Any sound rating scheme will allow for the individuality of the teachers rated. Passing judgment upon all the factors which contribute to the efficiency of a teacher, and determining the degree of his achievement as compared with others are only the beginnings of supervision. In the light of whatever competence the teacher possesses, suggestions should be made which will lead to still greater achievement. Wherever there is weakness, there is opportunity for supervision to enter and help teachers to overcome their particular deficiencies.

The periodic evaluation of the results of instruction is not the only evaluation that is needed in the Industrial Arts program. The curriculum is equally important. It has changed from time to time as social conditions have changed, for education endeavors to fit the child to his environment. In these days of rapid changes and social flux, it is important that there be periodic evaluation of the curriculum offerings in terms of the changing social needs.

A supervisor of Industrial Arts, through his superior training and experience, can be of a great deal of help to the Industrial Arts teacher in making such an evaluation. He is, or should be, thoroughly familiar with present conditions on a wide scale and with the best educational opinion on the subject. He is not only able to evaluate the offerings of a curriculum, but he can interpret needed changes and improvements. He can do this because he is not tied down by teaching procedures and has time to give to the work. Once again, however, the caution is interpolated

*ibid.*
here—the evaluation must be a cooperative affair between supervisor and teacher working harmoniously together. The supervisor must know how to draw the teachers into curriculum evaluation and revision.

On the whole, teachers are more sympathetic toward a course in the making of which they or their representatives have had a part. They are more interested in its success, and there is more general participation in an intelligent use of the new course if it is understood and appreciated. According to one superintendent of schools, it matters little what the educational philosophy of the administrative officers of a school system may happen to be if that philosophy cannot be made a part of the working technique of the classroom teacher. 10 It is highly important that the person who actually uses the course of study understand and appreciate it.

Utilization of Research

There is still another method by which the supervisor may aid in building a desirable relationship between himself and the classroom teacher. This is a proper utilization of research. Morrison says that probably the most urgent current need of education today is an aggressive, responsible leadership which will carry on a broad, comprehensive research directed to the formulation of policy and to the evaluation of educational programs. 11 He says:

10 Ibid., p. 180.
Much of the research needed in education will be in the nature of controlled experimentation. Thus far, American education has developed largely through the processes of trial and error. The process is not necessarily bad; but often it is wasteful. Research refines the process, by submitting the germinal idea to more rigorous thinking, by checking the proposal against other efforts that have included similar or identical elements, by objectively defining and describing content and method, by testing outcomes, and by publishing results so that others may profit from what is good and be forewarned against that which does not prove good.\(^\text{12}\)

Research in Industrial Arts is especially necessary because the work, to be effective, must be linked closely with the needs of the local community and those of the pupils. Texas is especially rich in natural resources—resources that an Industrial Arts training period will aid in utilizing. It is obvious that man and society have a vital stake in the way resources are used. The dependence of people upon physical resources is the problem of their use. Ivey says:

> By using the community as a laboratory for resource study...a major step is taken in placing resource study on a concrete level of understanding...and tying academic study to the community, state, and regional social economy...community problems and community needs automatically become the data for analysis. Social resources available to meet community needs are identified and perhaps utilized in the laboratory study.\(^\text{13}\)

The part played by a supervisor in any research program is not only that of participation, if he so desires, but also that of being able to evaluate the work and make it available to other regions. Because he would work in various

\(^\text{12}\)Ibid.

\(^\text{13}\)John E. Ivey, Jr., *Channeling Research into Education*, p. 21.
parts of the state, he would be able to pass along any in-
formations about research or improvements made in any field.
It is part of his work to discover opportunities for im-
provement in materials and methods of instruction, to exper-
iment with those which appear to be better than those in use
currently, to measure results, and to formulate his con-
clusions in a helpful, practical way. It is further his
province to discuss with classroom teachers the results of
his study and research and to enlist their cooperation in a
trial of projecting new courses or techniques.

Teaching Aids

In this connection, there are continually being pro-
duced new teaching aids such as the use of films, radio,
and field trips. The supervisor, through constant travel,
is in touch with all the latest developments and can pass
this knowledge on to the individual teachers. Films that
would be too costly for one school to buy may be borrowed
through a supervisor who, in turn, passes them on to still
another school.

Inter-school Activities

Supervision, too, may utilize interschool and inter-
class visitation and provide for the observation of demon-
strations of new teaching plans and aids.14 Such visits
promote, not only increased knowledge, but also better

14Boodish, op. cit., p. 347.
relations between schools and more appreciation of the work of others. For example, the student in an Industrial Arts class in a city may gain a much wider appreciation of what the work means as a whole if he visits some rural class in an altogether different section of the country. He visualizes differing needs and differing ways of achieving objectives.

Some methods, then, by which the supervisor can build a wholesome, cooperative partnership with the classroom teacher are participating supervision, periodic evaluation of instruction through survey method and appropriate tests, periodic evaluation of curriculum offerings in terms of changing social needs, utilization of research, and provision for interschool and interclass visitation. The extent to which he is able to carry out these and similar cooperative undertakings will depend upon his ability to achieve creative supervision instead of fault-finding inspection.
CHAPTER IV

THE ATTITUDE OF INDUSTRIAL ARTS TEACHERS IN TEXAS TOWARD
SUPERVISION AS SHOWN IN DATA FROM QUESTIONNAIRES

One hundred and seventy of the questionnaires on supervision were sent to the Industrial Arts teachers of Texas. The response was good. Three teachers were kind enough to return the questionnaires where the work was not offered, and one teacher returned the questionnaire unanswered, with the notation on the back that he was not interested. However, when the count of "filled out" questionnaires was completed, it was found that there were one hundred which could be used in the survey. Figure 1 shows the approximate location of the schools represented, and it can be seen from the distribution that all portions of the state are represented. Since many of the small high schools do not have the facilities for teaching Industrial Arts, it is assumed that a significant sample of the schools is represented in the survey.

For the purpose of analysis, the questionnaires are divided into three groups: 1, 2, and 3. Group 1 comprises teachers with ten years or more of experience; Group 2, is teachers with from five to ten years of experience; and Group 3, is made up of those with less than five years of
FIGURE I

DISTRIBUTION OF RETURNS OF INDUSTRIAL ARTS QUESTIONNAIRE THROUGHOUT TEXAS
experience. There are thirty-three teachers in Group 1, thirty in Group 2, and thirty-seven in Group 3.

The first two questions concern personal information about the teacher; namely, school system, number of students enrolled, and number of years of teaching experience in Industrial Arts. With one exception, the data from this portion of the questionnaire have been tabulated and are presented in table form. The exception is the data concerning the enrollment figure. Evidently, a number of the teachers misunderstood the question covering this information, because some of them listed the entire enrollment of their school, and others merely gave the number of students actually enrolled in the Industrial Arts classes. Because of this lack of uniformity, the data from this particular question are omitted.

The manner in which the Industrial Arts teachers answered the questionnaire was very pleasing. The majority of the teachers gave attention to all the details of the different questions. The unanimity of opinion expressed on the same questions indicated that the material was read and studied. There were a wide variety of comments penciled in. This was a further indication of teacher-interest in the subject under study. Few of the teachers failed to differentiate between the varied questions.

Table 1 gives the information concerning the group of teachers with more than ten years of experience.
### TABLE 1

**AGE AND TEACHING EXPERIENCE IN INDUSTRIAL ARTS OF THE TEACHERS IN GROUP 1**

<table>
<thead>
<tr>
<th>Age of Teacher</th>
<th>Number of Years Experience in Teaching Industrial Arts</th>
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The number of years of experience of these teachers is significant. Such a group of men should have had time to form some worthwhile conclusions concerning the need for and objectives of supervision.
Table 2 presents the same information concerning the Industrial Arts teachers in Group 2.

**TABLE 2**

AGE AND TEACHING EXPERIENCE IN INDUSTRIAL ARTS OF THE TEACHERS IN GROUP 2

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Eleven of the teachers in this group have had as much as ten years of experience in teaching Industrial Arts, and only six of them have had less than six years experience.

Table 3 presents the age and teaching experience of the Industrial Arts teachers in Group 3.
TABLE 3

AGE AND TEACHING EXPERIENCE IN INDUSTRIAL ARTS OF
THE TEACHERS IN GROUP 3

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</tbody>
</table>

Fourteen of these teachers have had only one year of experience in teaching Industrial Arts. Recent service with the Army has decreased their opportunities for teaching.
The next phase of the questionnaire deals with questions concerning the teacher's attitude toward supervision of the Industrial Arts program. The questions were:

(3) Did you have any supervision from a qualified Industrial Arts teacher when you began your teaching career? Yes No

(4) Would a qualified Industrial Arts supervisor be of any assistance to you in setting up a good program? Yes No

(5) Do you think that a beginning teacher needs assistance to get a well-rounded program set up in his individual situation? Yes No

(6) Do you think that a specific set of objectives should be set up to fit individual localities? Yes No

(7) Do you think, as a teacher, that a qualified supervisor could be of any help to you now? Yes No

(8) Do you think a supervisor would be a hindrance to your program? Yes No

(9) Do you think that it is necessary to have statewide supervision to be recognized as a professional field in the educational set-up? Yes No

Table 4 presents the data obtained from Groups 1, 2, and 3 on these questions.

TABLE 4

THE ATTITUDE OF THE INDUSTRIAL ARTS TEACHERS IN GROUPS 1, 2, AND 3 ON SUPERVISION

<table>
<thead>
<tr>
<th>Group</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td>1</td>
<td>12 21</td>
<td>29 4</td>
<td>33 0</td>
<td>32 1</td>
<td>24 9</td>
<td>0 33</td>
<td>21 6</td>
</tr>
<tr>
<td>2</td>
<td>4 26</td>
<td>255</td>
<td>29 1</td>
<td>27 3</td>
<td>28 4</td>
<td>2 28</td>
<td>25 5</td>
</tr>
<tr>
<td>3</td>
<td>5 32</td>
<td>33 2</td>
<td>37 0</td>
<td>37 0</td>
<td>37 0</td>
<td>0 37</td>
<td>34 3</td>
</tr>
</tbody>
</table>

1 Questionnaire.
Analysis of these data show some significant things in considering the need for supervision of the Industrial Arts program in the public schools.

In Group 1, where the teaching experience in Industrial Arts is over ten years, it is seen that twelve teachers had the advantages of supervision when they first began teaching. Only four teachers in Group 2 and five in Group 3 had this advantage.

Four teachers out of thirty-three who answered the questions in Group 1 stated that they are of the opinion that they do not need the assistance of a qualified Industrial Arts supervisor. Five teachers in Group 2 and two in Group 3 answered likewise. However, only eleven teachers out of one hundred who answered the questions said they do not think they need any supervision.

Only one teacher stated that the beginning teacher does not need assistance in setting up a good program, and the lone objector qualified his statement with the words: "It depends on the training of the teacher".

Ninety-six teachers specified that they considered it necessary for a specific set of objectives to be set up for individual localities. Three of the four dissenting teachers were in Group 2, and one was in Group 1. There was unanimity among the less experienced teachers.

Twenty-three of the more experienced teachers in Group 1 said that they think a qualified supervisor would be of assistance to them, while nine answered "no". In Group 2,
four teachers out of thirty said they think qualified supervisors would not help them. All teachers in Group 3 signified their desire for assistance.

Only two teachers in all the groups—and these were both in Group 2—stated that they feel that a supervisor would be a hindrance to their program.

There is some difference of opinion as to the necessity of state-wide supervision for professional recognition. In Group 1, six teachers answered in the negative; in Group 2, five; and in Group 3, three teachers answered "no". However, eighty-four teachers in the combined groups stated that they think state-wide supervision is necessary for adequate professional recognition.

In considering the data, it is apparent that there is not a great deal of diversity among the groups on the several questions. There are a few dissenters in almost every group, but the consensus of opinion is favorable to qualified supervision. Many of the teachers, in their answers, stressed the term "qualified Industrial Arts supervisors".

The next phase of the questionnaire deals with the objectives that the teachers use in individual situations. A list of objectives taken from recognized sources in the field of Industrial Arts was set up, and the teachers were asked to indicate which they use and which they do not. The objectives were listed under the sub-heads a, b, c, d, e, f, g, h, i, j, k, l, and m and are as follows:

a. ( ) To develop an active interest in industrial life and in methods of production and distribution.
b. ( ) To develop the ability to select, care for, and use properly the things he buys or uses.
c. ( ) To develop an appreciation of good workmanship and design.
d. ( ) To develop an attitude of pride of interest in his ability to do useful things.
e. ( ) To develop in each pupil a feeling of self-reliance and confidence in his ability to do useful things.
f. ( ) To develop the habit of an orderly method of procedure in the performance of any task.
g. ( ) To develop the habit of self-discipline which requires one to do a thing when it should be done, whether it is a pleasant task or not.
h. ( ) To develop the habit of careful, thoughtful work without loitering or wasting time. (Industry)
i. ( ) To develop an attitude of readiness to assist others when they need help, and to join in group undertakings.
j. ( ) To develop a thoughtful attitude in the matter of making things easy and pleasant for others.
k. ( ) To develop an understanding of mechanical drawing, the ability to interpret the conventions used in drawing and working diagrams, and the ability to express one's ideas by means of drawing.
l. ( ) To develop elementary skills in the use of more common tools and machines and to gain a knowledge of the methods of procedure in tasks frequently encountered by the average man, together with a knowledge of the working qualities and characteristics of most-used materials.
m. ( ) To develop the ability to use the mathematics required in the various trades.  

Each teacher was asked to check the objectives which he used in his individual situation. In this respect, he was asked to indicate whether or not he used the objectives in his work. As previously mentioned, these objectives were the ones most generally accepted in the field as being desirable and worth while.

Table 5 presents the data obtained from Group 1, which was comprised of the more experienced teachers.

---

TABLE 5

OBJECTIVES WHICH WERE USED BY THE OLDER AND MORE EXPERIENCED INDUSTRIAL ARTS TEACHERS, GROUP 1

<table>
<thead>
<tr>
<th>Objective</th>
<th>Number of Teachers Using Objective</th>
<th>Number of Teachers Not Using Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>b</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>c</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>d</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>e</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>f</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>g</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>h</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td>i</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>j</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>k</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>l</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>m</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>387</strong></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

It is apparent that the percentage of the more experienced teachers who use recognized Industrial Arts objectives is high. Objective "d"--to develop an attitude of pride of interest in his ability to do useful things--had eleven negative marks. Three objectives, "c", "e", and "f", were all marked in the affirmative.

Group 2, as previously mentioned comprises the teachers with experience in Industrial Arts teaching ranging from five to ten years. Their use of the accepted objectives in Industrial Arts should be significant in evaluating the effect of experience on the use of objectives.

Table 6 presents the data on the use of objectives by Group 2.
There is some variation between this group and Group 1. Twelve teachers indicated that they do not use Objective "a", which is the development of an active interest in industrial life and in methods of production and distribution. Seven said they do not use Objective "b". Nine teachers indicated that Objectives "k", "l", and "m" are not used, but the percentage of teachers using the other objectives is high. The total number of negative marks was fifty-two, while the total number for Group 1 was only forty-two.

Table 7 presents the data on Group 3 of the Industrial Arts teachers.
TABLE 7

OBJECTIVES WHICH WERE USED BY THE INDUSTRIAL ARTS
TEACHERS IN GROUP 3

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Number of Teachers Using Objective</th>
<th>Number of Teachers Not Using Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>b</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>c</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>d</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>e</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>f</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>g</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>h</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>i</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>j</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>k</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>l</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>m</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>387</strong></td>
<td><strong>75</strong></td>
</tr>
</tbody>
</table>

The number of negative marks against the use of objectives increased in this instance to seventy-five as against forty-two for Group 1 and fifty-two for Group 2. This would indicate that the teachers, as they have grown in service, have come more and more to appreciate the value of objectives in the Industrial Arts program.

In the analysis of the different objectives, it is found that in Groups 2 and 3 the greatest number of negative marks were placed against Objectives "a" and "b". Such a practice is not in accord with the literature in the field of Industrial Arts. The problems of production and distribution are basic ones in the complex industrial society in
which we are living today. This is especially so in the field of Industrial Arts. The ability to select wisely and to care for the things one buys or wears is also an important asset in the life of any individual. The fact that the Industrial Arts teachers indicated that these objectives are not used is an argument for supervision. The setting up and coordinating of objectives is one of the main functions of a supervisor's work. While the percentage who fail to use different objectives is not very high, it is higher than it should be according to modern educational practices and philosophy.

Question 11 in the questionnaire deals with the viewpoints of the teachers themselves on the ability of a supervisor to help them realize their objectives. The data taken from the questionnaire on this item are shown in Table 8.

<table>
<thead>
<tr>
<th>Number of Teachers Who Believed Supervisor Could Aid</th>
<th>Number of Teachers Who Believed Supervisor Was Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Group 2</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Group 3</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
The attitude of the more experienced teachers towards the ability of a supervisor to aid them in realizing their objectives is significant in this study. The great majority of them signified that they think a supervisor could aid them in spite of their years of experience in the work. There are some dissenters in all three groups, but the preponderance of opinion is favorable to supervision.

On the question of what type of supervision is desired, the teachers were outspoken. The question was asked concerning three types of supervision: academic, participating, or "others". Table 9 gives data concerning the replies.

TABLE 9
ATTITUDE OF THE INDUSTRIAL ARTS TEACHERS TOWARD TYPES OF SUPERVISION

<table>
<thead>
<tr>
<th>Group</th>
<th>Types of Supervision</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Academic</td>
<td>Participating</td>
<td>Others</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>37</td>
<td>0</td>
</tr>
</tbody>
</table>

The attitude of the teachers toward academic supervision is very decidedly negative. Since such supervision has been that commonly called "inspection", the conclusion is that this type of supervision is no longer needed nor desirable. Modern educational practices favor a cooperative, helpful attitude on the part of the supervisor rather than one of
fault finding and detailed criticism, and the findings of
this study indicate that the Industrial Arts teachers approve
such practice. Only one teacher out of one hundred indi-
cated that he favors academic supervision, and he qualified
his answer by marking, also, that he is in favor of other
kinds as well.

The last phase of the questionnaire deals with a list
of desirable things for a supervisor to check. A list of
proposed activities for a supervisor was given, and the
teachers were asked to check the ones that they thought most
desirable for a supervisor to use. The list is as follows:

a. ( ) Constructive criticism of methods and pro-
cedures.
b. ( ) Constructive criticism of plant layout.
c. ( ) Constructive criticism of materials.
d. ( ) If a difficulty exists to trace that diffi-
culty, whether it be with the teacher or administration.
e. ( ) To check the qualifications of teachers.
f. ( ) To evaluate the standards of work done by
the students.
g. ( ) To set up and classify or group shops in the
proper category, taking into consideration the financial
set up in relation to the physical plant.
h. ( ) Check the Industrial Arts curriculum to see
that the proper courses are being offered.
i. ( ) Check to see if each teacher has a compre-
prehensive course of study for each Industrial Arts course and
whether this course of study is adequate to cover the subject.
j. ( ) A supervisor should give advance notice of his
visit.
k. ( ) A supervisor should not give advance notice of
his visit, so that he may be able to see the situation as it
really exists.
l. ( ) A supervisor should know in advance the situa-
tion before his visit.
m. ( ) The supervisor, instead of sending a written
report to the administration, should give his opinions to
the teacher if any irregularities exist. in order that the
teacher may have a chance to correct them.
n. ( ) A supervisor should not let personal views conflict with his visits.

o. ( ) A supervisor should be a successful Industrial Arts teacher. 3

The attitude of the Industrial Arts teachers in Group 1 towards supervisory practices is presented in Table 10.

TABLE 10
ATTITUDE OF THE MORE EXPERIENCED TEACHERS ON SUPERVISORY PRACTICES

<table>
<thead>
<tr>
<th>Supervisory Practice</th>
<th>Number of Teachers Who Favored Practice</th>
<th>Number of Teachers Who Did Not Favor Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>b</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>c</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>d</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>e</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>f</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>g</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>h</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>i</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>j</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>k</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>l</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>m</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>n</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>o</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>410</td>
<td>85</td>
</tr>
</tbody>
</table>

The opinions of the more experienced teachers, as shown in the data, are favorably inclined toward most of the practices as outlined in the questionnaire. However, there is unanimity of opinion in only one instance; all the teachers agreed that the supervisor should be a qualified Industrial Arts teacher.

3Questionnaire.
Supervisory practices "k", "l", and "m" drew more negative reaction than any other. These three questions deal with the controversial one of supervisory visits, and a variety of opinions was found. Eighteen of these more experienced teachers indicated that they think a supervisor should notify a school before his visit, while fifteen think that the visit should be unheralded. Nineteen teachers indicated that they are of the opinion that the supervisor should be free to come and go at will without any advanced notice of any kind. Twelve teachers indicated opposition to this. Such attitudes indicate that the idea of supervision has not yet successfully been disassociated from the word "inspection". The modern conception of a supervisor is a helpful aid, a counselor, a friend who can be turned to for advice and aid on complex and difficult problems. When supervision reaches this level, the teacher will welcome the supervisor at any and all times. According to Struck:

Teachers appreciate supervisors and administrators who are outstanding in their field. They want to be supervised by persons who understand what vocational teaching involves, who are able to recognize superior vocational teaching when they see it, who can inspire them to do their best, and who will not fail to commend meritorious teaching.  

Table II presents the attitudes of the Industrial Arts teachers in Group 2 on the supervisory practices.

---

The teachers in Group 2 gave more negative votes to differing supervisory practices than the ones in Group 1. By far the greatest number of negative votes were cast against the items concerning the supervisor's visits to the schools. Twenty-four teachers in this group stated that they think the supervisor should come at any time without any previous announcement of the visit. Twenty teachers do not believe that a supervisor should know the situation in any given school before his visit. Other practices that drew a high percentage of negative votes were those of supervisory criticism of materials and of the shop layout.
The attitude of Group 3, the least experienced teachers, toward supervisory practices is presented in the data in Table 12.

**TABLE 12**

**ATTITUDE OF THE INDUSTRIAL ARTS TEACHERS IN GROUP 3 TOWARD SUPERVISORY PRACTICES**

<table>
<thead>
<tr>
<th>Supervisory Practices</th>
<th>Number of Teachers Favoring Practices</th>
<th>Number of Teachers Not Favoring Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>b</td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>c</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>d</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>e</td>
<td>28</td>
<td>11</td>
</tr>
<tr>
<td>f</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>g</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>h</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>i</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>j</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>k</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>l</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>m</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>n</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>o</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>410</td>
<td>145</td>
</tr>
</tbody>
</table>

The negative points made against different supervisory practices increase as the years of experience decrease. The controversial practices, as shown in consideration of the other groups, are likewise opposed by this group. In almost every instance, there is an increase in the number of negative points.
A comparison of the attitudes of the different groups on the use of objectives and on supervisory practices may further clarify the problem. The data in Table 13 give this comparison.

TABLE 13

COMPARISON OF THE ATTITUDE OF THE THREE GROUPS OF INDUSTRIAL ARTS TEACHERS TOWARD THE USE OF OBJECTIVES AND CERTAIN SUPERVISORY PRACTICES

<table>
<thead>
<tr>
<th>Group</th>
<th>Objectives</th>
<th>Supervisory Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For Against Per Cent</td>
<td>For Against Per Cent</td>
</tr>
<tr>
<td>1</td>
<td>387 42 10.8 190 85 27.3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>438 52 11.8 219 131 59.8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>387 75 19.3 410 145 35.3</td>
<td></td>
</tr>
</tbody>
</table>

The figures are composite and represent the combined reactions of all the teachers, but the results show a significant trend among the teachers on their attitudes toward the use of objectives and of supervisory practices.

The findings show that the more experienced teachers use more objectives than the less experienced group. Likewise, the more experienced teachers do not have as much opposition to some supervisory practices as the less experienced group. Since one of the main arguments for a supervisor is that he will aid in setting up objectives, these figures indicate that a supervisor could improve the present program, especially in the field with the less
experienced teachers. The expressed willingness of these teachers for such supervision and their feeling that it would aid them are further arguments to be advanced for it.

The one point on which there was complete agreement among the groups was on Item "c" in the supervisory practices: "A supervisor should be a successful Industrial Arts teacher". This opinion of the teachers is in accord with the ideas advanced by modern vocational education philosophy.

The Industrial Arts teachers of Texas, by their replies to the different questions concerning supervision, have shown that the majority are alert to the situation and will welcome the work of a qualified supervisor. The replies of the older, more experienced teachers are especially encouraging. It is significant that they, with their years of experience, should desire supervision and believe that it would be helpful to them. Many of them had been teaching before many of the curriculum reforms prevalent today were instituted. Supervision is a comparatively new idea in teaching, and it is highly commendable and heartening for the future of Industrial Arts that these older teachers glimpse its promises and hopes for the future.
CHAPTER V

RECOMMENDATIONS AND SUGGESTIONS

The following conclusions have been made from the study of the need and desire for supervision of the Industrial Arts teachers of Texas:

1. The literature in the field of education indicates that supervisory practices have been of value to both teachers and pupils when they have not been conducted on an "inspection" basis.

2. A qualified Industrial Arts supervisor could aid the Industrial Arts teachers in Texas by helping them to coordinate objectives and to standardize their programs. He could promote growth in service, be of inestimable help in the orientation of new teachers, and serve as a guide and an inspirational leader. He could be a unifying influence in a state-wide program of study.

3. The Industrial Arts teachers of Texas are aware of the need for supervision of a program that must provide for many diversified needs of this large state.

4. The methods used by supervisors, if they are to be welcomed or effective, must not be merely of the inspection type; the new ideas call for leadership and participating supervision. The Industrial Arts teachers want a helper, and a counselor, not a fault finder or a dictator.
5. A high percentage of the Industrial Arts teachers of Texas, through their answers to the questionnaire, have indicated their desire for state-wide supervision of their work, and they believe that it would be of value to them.

6. The Industrial Arts teachers do not favor academic supervision, and it would not be welcomed by them.

7. The Industrial Arts teachers who have the most experience in the work use more objectives and favor more supervisory practices than the teachers with less experience.

8. The interest shown by the teachers in answering the questionnaire and in the many voluntary comments indicates that they have given much thought to the problem of supervision, and that they are taking an active interest in efforts to improve their work as a whole.

In the light of these data, it is recommended that the State Department of Education, when finances permit, designate a state-wide supervisor for the Industrial Arts program of the public schools of Texas. Such a supervisor, if his work is to be welcomed or effective, should be a successful Industrial Arts teacher with many years of experience. The needs of the field, the required qualifications, and the proven leadership of the proposed supervisor should be the bases for selection. The teachers, in their answers to the questions, stressed the point that a supervisor should not be chosen on the basis of his political beliefs or his influence in political circles.
It is suggested that the Industrial Arts teachers keep themselves informed on the matter of state-wide supervision and make their views known to the men who represent them in the State Legislature. The State Department of Education operates under statutory laws and in many instances, cannot do many of the things it would like to do or that it feels would be beneficial for the schools. Funds should be made available for the appointment of a State Supervisor of Industrial Arts education. The teachers can aid in obtaining this through unified effort in support of such a demand.
APPENDIX

Questionnaire

1. Name_________________Age____ Name of School System
   Your Title_________________ Approx. Number of Students____

2. Number Years Experience in Teaching Industrial Arts____

3. Did you have any supervision from a qualified Industrial Arts teacher when you began your teaching career?
   (Yes)___(No)____

4. Would a qualified Industrial Arts supervisor be of any assistance to you in setting up a good program?
   (Yes)___(No)____

5. Do you think that a beginning teacher is in need of assistance to get a well-rounded program set up in his individual situation? (Yes)___(No)____

6. Do you think that a specific set of objectives should be set up to fit individual localities? (Yes)___(No)____

7. Do you think as a teacher that a qualified supervisor could be of any help to you now? (Yes)___(No)____

8. Do you think a supervisor would be a hinderance to your program? (Yes)___(No)____

9. Do you think that it is necessary to have statewide supervision to be recognized as a professional field in the educational set up? (Yes)___(No)____

10. Please check the objectives that you use in your individual situation:

    ( ) To develop an active interest in industrial life and in methods of production and distribution.

    ( ) To develop the ability to select, care for, and use properly the things he buys or uses.

    ( ) To develop an appreciation of good workmanship and good design.
( ) To develop an attitude of pride of interest in his ability to do useful things.

( ) To develop in each pupil a feeling of self-reliance and confidence in his ability to deal with people and to care for himself in an unusual or unfamiliar situation.

( ) To develop the habit of an orderly method of procedure in the performance of any task.

( ) To develop the habit of self-discipline which requires one to do a thing when it should be done, whether it is a pleasant task or not.

( ) To develop the habit of careful, thoughtful work without loitering or wasting time. (Industry)

( ) To develop an attitude of readiness to assist others when they need help, and to join in group undertakings. (Cooperation)

( ) To develop a thoughtful attitude in the matter of making things easy and pleasant for others.

( ) To develop a knowledge and understanding of mechanical drawing, the interpretation of the conventions used in drawings and working diagrams, and the ability to express his ideas by means of drawings.

( ) To develop elementary skills in the use of the more common tools and machines, and a knowledge of the methods of procedure in tasks frequently encountered by the average man together with a knowledge of the working qualities and characteristics of some of the most used materials.

( ) To develop the ability to use the mathematics required in the various trades.

11. Based on your experience, do you think a supervisor could aid us as a body to reach our objectives? (Yes)____(No)____

12. What type or kind of supervision are you interested in:
   1. (Academic supervision) i.e., Checking of notebooks, drawings as in the past__________.
   2. (Participating supervision) i.e., Where your shop is given a clinical check-up to determine if there may be some way to help and if any irregularities exist and where the irregularities are located.__________.
   3.____________________
13. From the list below please check carefully the things you think most desirable for a supervisor to check.

( ) Constructive criticism of methods and procedures.
( ) Constructive criticism of plant layout.
( ) Constructive criticism of materials.
( ) If a difficulty exists to trace that difficulty whether it be the teacher of administration.
( ) To check the qualifications of teachers.
( ) To evaluate the standards of work done by the students.
( ) To set up and classify or group shops in the proper category, taking into consideration the financial set-up in relation to the physical plant.
( ) Check the Industrial Arts curriculum to see that the proper courses are being offered.
( ) Check to see if each teacher has a comprehensive course of study for each Industrial Arts course and whether this course of study is adequate to cover the subject.
( ) A supervisor should give advance notice of his visit.
( ) A supervisor should not give advance notice of his visit; so that he may be able to see the situation as it actually exists.
( ) A supervisor should know in advance the situation before his visit.
( ) The supervisor should give his opinions to the teacher if any irregularities exist in order that the teacher may have a chance to correct same, instead of sending written report to administration.
( ) A supervisor should not let personal views conflict with his visits.
( ) A supervisor should be a successful Industrial Arts teacher.
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