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Responsibilities of Washington Industrial Arts Teachers for Classroom Budgetary and Financial Procedures

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RESPONSIBILITIES OF WASHINGTON INDUSTRIAL ARTS TEACHERS FOR CLASSROOM BUDGETARY AND FINANCIAL PROCEDURES

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CHAPTER I

INTRODUCTION

The twentieth century has provided man with new challenges and developments in practically all areas of his culture. The educational programs in our nation's schools have felt the impact of this evolution. Educators must evaluate these new challenges and developments and apply methods to keep our school programs abreast of the times. This is not the task or responsibility of any one individual or any special segment or division of the school program. It is the obligation of all individuals to work as a group to improve the over-all educational program.

I. PURPOSE OF THE STUDY

This study was undertaken to broaden the writer's background and knowledge of one part of his field of specialization, industrial arts.

The study will attempt to show the present methods employed by industrial arts instructors in the school districts of the state of Washington in establishing (1) the industrial arts department budget, (2) various systems of collecting or handling money received from students in industrial arts courses, and (3) various disbursing methods

or policies.

II. NEED FOR THE STUDY

The industrial arts instructor places his greatest emphasis on the instructional program in his various classes. In addition, he must give considerable time and thought to responsibilities relative to maintenance, equipment, ordering of supplies, and similar duties.

Early in the spring of each school year, the superintendent calls upon each department of the school program for an estimate of money required to carry out its instructional program in the ensuing school term. The industrial arts department, an integrated segment of the complete school program, is no exception, and its teaching staff must evaluate its monetary needs for presentation and approval.

When the budget has been approved by the school board and each department is aware of its allotment, instructional materials and supplies may then be purchased. Requests for purchases will orginate from the individual instructors. Early in the school year, as instruction progresses, materials and supplies begin to evolve into projects. Thus, an additional responsibility of the industrial arts teacher develops. Money must be collected from students for these materials and supplies.

The degree of responsibility of the industrial arts teacher in budgeting and collecting and disbursing appropriated funds depends upon the policy established in each school district.

It was the intent of this writer to survey present policies and methods used by industrial arts teachers throughout the State of Washington, in an effort to provide a modern, comprehensive approach to these elements of the industrial arts program. The compilation of various ideas and suggestions could well expose trends of systems and improve methods and as a result benefit the industrial arts instructor in his work.

III. DEFINITIONS OF TERMS USED

Industrial Arts Instructor

The term industrial arts instructor will include teachers in junior and senior high schools whose instructional program centers around tools, equipment, materials, processes of industry, and their implications upon our culture.

Disbursement of Funds

This term refers to the spending, by industrial arts instructors, of the money appropriated in the school district budget for the operation of the industrial arts program.

Resale Materials and Supplies

Resale materials and supplies refer to items provided in industrial arts courses for students construction projects. Students are generally expected to pay for such materials and supplies.

IV. ORGANIZATION OF THE REMAINDER OF THESIS

Chapter two will present a resume of literature reviewed concerning (1) the industrial arts budget, (2) various systems of collecting or handling money received from students in industrial arts courses, and (3) various disbursing methods and policies discussed in text books and periodicals in the field of industrial arts and general education.

Chapter three will identify the experimental technique developed to gather the material used in the survey. It will introduce the questionnaire, show how it was utilized to gather information, and explain the system this writer devised to treat information gathered through its use.

Chapter four will present the information and findings collected through the use of the questionnaire. The fifth chapter will consist of the summary and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

Educators and authors familiar with the field of industrial arts have presented their own views and summarized the findings and views of others in texts and professional magazines. Information concerning the responsibilities and problems of industrial arts instructors relative to budgeting, collecting or handling of money, and disbursing available funds was found to be sparse and usually but remotely related to the actual problems facing industrial arts instructors in their daily and yearly tasks.

The summary of the literature reviewed will be presented in the following three main divisions. First will be the literature dealing with establishment of the industrial arts budget and suggestions on how it may best be presented to the school board for approval. Second will be suggested methods and attitudes related to the collecting and handling of money received from students. The third division will be limited to literature presenting recommended methods for the disbursement of funds budgeted for industrial arts.

I. LITERATURE BASED ON ESTABLISHING THE INDUSTRIAL ARTS BUDGET

For an industrial arts program to be successful, a wide

variety of materials must be in the shop to be distributed to students when needed. The right materials for every project and the correct amount of materials of each type must be available for the entire class.

A good selection of materials and supplies is needed to meet the needs of students with a wide range of ability. These needs should be provided for either by ordering at the beginning of the term or by arranging to secure such items during the year.

Sufficient numbers of hand tools should be available for students to develop materials into projects. The number and variety of tools required for this activity may be based upon the class sizes expected and the type and variety of projects to be constructed with these hand tools. It would be desirable to have funds available to replace broken or worn-out tools or to acquire additional tools as they are required.

Power equipment is a necessity in advanced industrial arts courses. Funds should be made available in the industrial arts budget each year to maintain the existing power equipment. Allowances should be made to replace worn, unsafe, or out-dated equipment, and money should be requested in the budget for new equipment to supplement the existing machines when there is a definite and practical need.

Early in the spring of each school year, the school district's budget director requests a survey of the money needs of each department of the school program. The industrial arts department must survey its financial position and estimate the money required to operate a satisfactory program for the coming school year.

In larger school districts, generally, a supervisor or director of industrial arts will assume the task of evaluating the department's needs and present the figures to the appropriate person. In smaller districts the principal of each school whose program includes courses in industrial arts must analyze and establish the money required to operate the following year's program.

The industrial arts instructor, whether a member of a large or small district teaching staff, will be expected to furnish an estimate of his budget needs. Very often the instructor will wonder just what to base his estimate on.

Suggestions for estimating the amount of material an average class will consume in a term are offered by Walter B. Jones, as a result of a survey of industrial arts instructors. They are:

Keep records:

Accumulated knowledge and records are the best criteria for use in making estimates.

Refer to the course of study and the average amount of material used in previous terms.

I keep a record of the requisitions for the past years and estimate my needs from this information.

Calculate from the average:

The average number of pupils in a class, the average number of projects each will complete, the material in an average project, so much allowed for waste--all must be considered in estimating the amount of material needed.

If one starts with the aims of a particular learning situation, and a course of study covering these aims, this will, in general indicate the kind and amount of material needed. This, multiplied by the number of teaching units, times the number of pupils, plus a margin for safety, will help to determine the amounts of material necessary.

Study the course:

The progress charts and the course of study are checked to determine a likely sequence of jobs or projects and an estimate of materials is made from these with the following factors in mind: (1) nature and the scope of the work to be done, (2) age, level, ability, and background of the pupils, and (3) the educational objectives to be attained (9:106).

The School Board and the Industrial Arts Budget

Schools are faced with ever-increasing operating costs. They are placed in the precarious position of requesting special fund-raising levies from the public in their districts. The amount of operating funds various departmental programs will receive will be based upon the size of the total budget and how important the superintendent feels the various programs

are.

The very nature of shop work makes it dependent upon materials, supplies, and equipment. These are essential to a smoothly operating industrial arts program. Walter B. Jones recommends the following suggestions for getting the necessary supplies and equipment:

1. Tell the school board your aims and how the supplies and equipment contribute to these aims.
2. Display attractive pupil work.
3. Don't be extravagant.
4. Build and repair things for the school.
5. Adjust projects to the supplies on hand.
6. Salvage spoiled material by changing specifications of projects (9:105).

Teachers very often report difficulties in receiving proper administrational attention to their needs. This lack of interest on the part of the administration may sometimes be genuine and often beyond alteration. Possibly, where teachers are finding uncooperative administrators, the fault lies with themselves. Emanuel E. Ericson offers the following suggestions:

> Keep the administration acquainted with progress. If the administrative office hears of the teacher's activities at no other time than when money is to be spent, there may be a poor chance for getting what is wanted.
>
> Have definite reasons for expansion or new organizations already in mind and be ready to state them---.
>
> Show how the plan in question will increase facilities for better teaching---.
>
> Know what you want. ---Administrators should be approached with definite, well thought-out propositions.

> Have a list of the desired equipment and its proposed use worked out before asking for it.
>
> Know the exact cost. ---Exact quotations from reliable firms are most convincing, but estimates from catalogs and price lists may serve (6:322).

Surveying Equipment Needs for the Remodeled or New Shop

Well-planned shops and the latest of modern high quality equipment do not guarantee efficient teaching, but excellent physical facilities greatly improve the chances for such. Every industrial arts instructor, sooner or later, is likely to participate in planning and equipping new shops or remodeling old ones.

An instructor teaching in a small district which doesn't employ a director or supervisor of industrial arts is more apt to cooperate in planning and setting up specifications for a new shop and the equipment involved than a teacher in a large city district.

The large metropolitan school district most generally employs a director of industrial arts. Among his responsibilities is the task of working with architects in establishing shop and equipment specifications. Under such circumstances the individual shop instructor is very rarely called upon to offer suggestions or ideas.

However, if the opportunity does occur and the instructor's cooperation is requested, his effectiveness will

depend largely upon his accumulated knowledge of the particular problem. Such knowledge should be twofold: (1) factual information covering efficient shop planning and (2) knowledge of how to impress his views upon those in official charge of planning and approving buildings and equipment.

The teacher is the ultimate consumer of the product. When his shop is being planned, he need not be too timid to assert himself, but he must do so tactfully and methodically. School administrators who propose policies, school boards who approve them, and architects who plan the buildings will all be glad to have proposals from the teacher, provided these proposals are sensible, clear cut, and based upon a knowledge of modern educational practices as well as possibilities in planning the physical plant. The earlier the teacher presents his views, the better chance he will have of getting a hearing. In presenting needs and requirements for a shop, it is well to make out not only a floor plan, but a complete model showing the layout and placement of all equipment (6:312).

In selecting school equipment, such factors as these might well be considered: (1) aims and objectives of the program, (2) type of shop to be served, (3) floor space available, (4) cost of equipment, (5) multiple purpose or

combination machines, (6) sources and availability of equipment, (7) purchasing schedule, (8) frequency of use, (9) size of tools and machines, (10) portable machines versus stationary machines, and (11) methods of specifying equipment (9:318).

The amount of money available, both at present and in the future, must be considered when planning equipment. Should one spend all that is at hand on a few "first-class" machines or attempt to spread it over a large area and insist less upon quality? The answer would probably depend partly upon the chance of getting more equipment at a later time. Present action might be different if there is a promise of another "allowance" next year (6:319).

II. LITERATURE ON METHODS OF COLLECTING MONEY FROM STUDENTS

Among responsibilities of the industrial arts instructor is the task of collecting money from the sale of instructional supplies. The extent of this duty varies from one school district to another. The scope of this obligation is determined by the policy established by the school district superintendent, the director of industrial arts, the principal, or often the industrial arts instructor.

The type of class, the variety of instructional mat-

erial, the teacher, and his methods of teaching should all be considered when policies for the collecting or handling of money are being formulated.

Occasionally, the industrial arts program is provided entirely at the expense of the school district. All instructional materials and supplies are provided without expense to the student. In such schools the money handling responsibility is not a problem for the teacher.

When the district policy requires the industrial arts teacher to handle money, through the sale of instructional supplies, the system should be simple enough so that students could understand and assume some responsibility. The system should require only a minimal amount of the teacher's or students' time. It should be possible for all transactions to be traced with accuracy at a later date, if necessary.

Silvius and Curry write that policies governing the issuing and sale of materials vary with the school systems. Here are five of common practices:

1. All materials are furnished by the board of education without cost to the individual student.
2. All materials are furnished through the eighth grade, and after that each student pays for his own instructional materials.
3. Materials are furnished for a minimum program; material used over the minimum essentials is paid for by the student.
4. The school furnishes basic supplies, such as screws, nails, paint, glue, and sandpaper, but

requires the student to purchase materials needed for the projects, such as wood, metal, and plastics.

5. The student is required to purchase all materials used in the shop (10:288).

Price lists of current prices on all available instructional materials and supplies should be posted for student observation. The instructor should make a definite point of making sure each student understands the method of computing the cost of his project materials.

Silvius and Curry present four plans for handling funds:

> Plan One: Sell all materials from a central store, such as the bookstore where instructional supplies for the total schools are sold directly to students. This works well if the shops are located near the store. Generally these stores remain open throughout the school day. The mark-up on materials should be based upon the school boards policy.
>
> Plan Two: The school's purchasing agent secures the materials according to the teacher's specifications and turns them over to the teacher to sell. These instructional supplies are stored in the shop and disbursed directly to the students as they desire them. The students are issued receipts for each transaction and inter [sic] the teacher checks the sale receipts into the central office at periodical intervals.
>
> Plan Three: The instructional supplies are furnished the teacher through the same procedure as outlined in plan two, but in this case the student uses a material credit card for his purchases from the teacher. Purchase of these numbered cards are [sic] normally made through the school office or bookstore. Amounts not used are refundable at the completion of the school term. These material tickets may be retained by the purchaser throughout the term or filed with the instructor.

> Plan Four: In this plan the teacher personally negotiates all transactions for purchasing instructional supplies. He inter-sells them directly to the students either on a cash basis or with the use of the credit card. This plan requires an accounting system verifying accurately each purchase and sale (10:289).

In addition to the above listed plans it is sometimes feasible to have the students pay directly to the office of the principal or superintendent, the office of the purchasing agent, or to a business secretary or clerk.

If it is possible, all payments should be handled by persons other than the industrial arts instructor, leaving him more instructional time. However, if this is not possible, the teacher should be particularly careful in keeping accurate records. All money received should be recorded immediately, if possible in the presence of the student.

Emanuel E. Ericson emphasizes the disadvantages of handling cash:

> A good rule, however, is to keep clear of handling cash in the shop, because it takes too much time in bookkeeping and offers too many chances for getting into personal expense, to say nothing of the possibility of being subject to suspicion (5:136).

Roland O. Byers listed twelve factors to be considered by a teacher or school district when setting up a system for the sale of materials:

1. Utilize simple forms.
2. Account for all money.
3. Account for all materials and supplies.

4. Satisfy administration that monies and materials are being handled in a businesslike manner.
5. Satisfy parents so they will be able to tell that the money given children for supplies is spent as intended.
6. Provide the teacher with an accurate system of accounting for all materials, monies, and supplies.
7. Teach students the value of a system for handling money and supplies.
8. Teach students to use business forms.
9. Keep necessary forms to a minimum.
10. Teach students to transact business in a business-like manner.
11. Keep an up-to-date balance of accounts.
12. Keep time needed for record keeping at a very minimum (2:10A,12A).

If the costs are assessed after a project is completed, this procedure might be followed, say Silvius and Curry:

1. Have the student make out a complete bill of material before starting work.
2. List cost for each item on bill of material so student will know the estimated cost of project.
3. Check each item as it is issued.
4. When stock is spoiled, add additional cost for a re-issue.
5. When the project is completed, have the student figure the total cost.
6. The total cost should then be checked by the teacher.
7. The student should take the statement of cost to the office or school store and pay the bill.
8. The student should then present the receipt to the teacher, who will record that the bill has been paid and permit the student to take the project from the shop (10:291).

In reviewing the problem of charging students for materials or having the school furnish all the necessary materials at no cost, Emanuel E. Ericson writes:

Both systems have advantages and disadvantages, however; he lists the following comments in favor of assessing the student.

1. If the student pays for his materials he feels more responsibility for his work.
2. Favorable habits of thrift and conservation are developed; also, there will be less waste of material.
3. The reduced per capita cost to the school will result in fewer objections by tax payers in general to the high cost of schooling.
4. Projects made and paid for by the student are his and will always be worth more than the material.
5. In project selection students will tend to be less over-ambitious in choosing large projects.
6. Students will not insist on working with unnecessarily expensive materials (6:132).

The advantages cited by Ericson for providing free material to students are:

1. Some of the better students who could finish larger and more attractive projects will do so because they're not handicapped for lack of funds.
2. The same opportunities should be provided for rich or poor alike in the public school workshops as well as in other instruction.
3. Very often many of the poor students come into the school shop program, and charging for materials is a cause of discouragement and of keeping down the enrollment (6:133).

Ericson further states:

> A reasonable practice would be to provide a certain amount of free materials for the preliminary and required individual work; however, in advanced programs the individual would be expected to pay. In most situations opportunities exist where-by a student may turn out a

> product for the school or some individual who will assume the material cost and include a little profit for the student (6:134).

Requisition blanks or bills of material should be used by students whether the school provides the material free or whether it is to be purchased. These forms should be used regularly, either in duplicate or triplicate. Written orders which contain cost estimates impress students with the value of materials. The type of information requested on the form may be adjusted to the course in which it is being used.

III. LITERATURE BASED ON DISBURSING INDUSTRIAL ARTS FUNDS

Instructional materials and supplies should be in the shop available for use at all times during the school term. The responsibility for establishing the needs and seeing to it that orders are made out is that of the individual industrial arts instructor.

The extent of this operation generally depends upon how much money the department has to spend and the method for disbursing funds. Whatever the policy is, disbursing these funds is time-consuming and requires considerable thought and judgement.

Upon being informed of the amount of money appro-

priated to the industrial arts department by the schoolboard in the preliminary budget, members of the staff may begin tabulating their needs. Requisitions for instructional materials and supplies will be made out and presented to the appropriate individual for approval.

In small school districts the requisition form progresses from the teacher to the principal for approval, then to the superintendent, who often acts as the business agent.

In large school districts, one member of the teaching staff in each building is assigned the roll of department head and receives the requisition from the teacher, checks it for completeness and need, and then forwards it to the principal for approval. With the principal's approval, the form is then passed on to the director of industrial arts. Upon his signature, the form continues on to the business agent or purchasing department.

The purchasing agent, upon receiving the requisition form, will find a source of supply where the items may be procured. If the school district operates a warehouse, all or part of the requisitioned materials will be available through this source. Occasionally, the teacher who initiated the requisition will indicate where the material may be purchased.

A new law passed during the 1961 Washington State

legislature states that districts are not obligated to obtain bids on amounts under twenty-five hundred dollars ($2500.00). The individual school district policy on purchases under this amount will vary.

Petty Cash Fund

In some schools, teachers occasionally are allowed to use money collected for projects as a petty cash fund to purchase supplies for the shop. An accurate record of all expenditures should be maintained where this is permitted. A specific entry for each purchase plus a receipted sales slip would provide sufficient evidence. The funds received and the money paid out plus the amount of cash on hand should balance at all times.

Writing Specifications

When competitive bids are required prior to the purchase of equipment for the industrial art shop, it is both necessary and desirable to write specifications. The following suggestions by Gordon O. Wilber on writing bid specifications may be helpful:

1. Decide upon the most important features desired in a given piece of equipment.
2. Find the machine (or other piece of equipment) which comes the closest to meeting all requirements.
3. Write specifications around the selected item in such a manner that all desired general features

are included, but not so specifically that no other make or model can meet the requirements.

4. If desired, the name, model, and catalog number of an item may be specified with the phrase "or equal" following. In such cases, care must be exercised to make sure that alternate proposals are actually equal to the item desired (13:309).

Requisitions should be checked for completeness and accuracy by an individual with a knowledge and background in the industrial arts area. It is helpful and desirable for the person initiating the order to list a specific source where the item may be purchased.

Emanuel E. Ericson writes:

> It is essential to write out all important requirements of a machine or other piece of equipment. Listed points that must be covered are: size, weight, horsepower of motors, sizes of tables, types of bearings, belts and pulleys, and a complete list of all accessories expected to be furnished. When the instructor is doubtful of specifications required, the purchasing agent for the school will be helpful in indicating requirements (6:321).

Assistance in selecting the proper item or machine may be received from experienced teachers, the department head, the supervisor of industrial arts, or the assistant director or director of industrial arts. They may also aid in suggesting sources where items or machines are available for purchase.

Efficient Ordering Recommendations

The following recommendations on how suppliers and manufactures can fill industrial arts instructor's orders more efficiently were gathered through an informal survey conducted by the staff of School Shop Magazine. Their recommendations are:

1. Furnish complete and specific information about the item being sought.
2. More complete and specific information should be given when tools are returned to the company for services and repairs.
3. Use the specific trade terminology found in the catalog from which the item is ordered.
4. List carefully the name of the manufacturer, the number, and the size.
5. Lumber dealers suggested that school personnel use the following terms when ordering:
   a. Hardwoods: FAS: Selects; #1 common; and #2 common.
   b. Softwoods: B and Better: C Selects: D Selects; 3rd. Clear; #1 Shop; #2 Common; and #3 Common.
   c. Specify which Mahogany: Philippine; African; Honduras.
   d. Specify which Pine: Ponderosa; Sugar Pine; Northern Pine.
   e. State whether lumber is to be rough or surfaced.
6. Place orders at least thirty days in advance of desired shipment date.
7. List the name of school originating the order because often the nomenclature of the item becomes garbled from the order passing through too many hands.
8. Often, orders, after being shipped to a school-district warehouse are held too long before being forwarded to the originating school.
9. Before ordering be sure the proposed equipment will fit into the curriculum (12:33).

In addition to the above statements this writer feels that the name of the instructor or the specific shop

initiating the requisition should be stated so there will be no mix-up within the school when the item is delivered. In schools having two or more industrial arts teachers, one should be delegated the responsibility of receiving requisitioned items, checking them, and distributing them to the appropriate instructor.

Supplier

Hints on receiving lower prices and better service from suppliers are offered by Thomas Diamond:

1. If the delivery date is mentioned in the order, be absolutely sure the school will be ready to accept delivery on that date.
2. If, through no fault of the dealer, the delivery date has to be postponed, be sure he gets his money early enough to enable him to discount his bills.
3. When the school is responsible for the delay in delivery, it is responsible to expect that any additional cost resulting from the delay will be borne by the school authorities.
4. When the installation of the equipment has to be approved by a representative of the school, it is only fair to the dealer that this be attended to promptly.
5. Give the dealer sufficient time to make quotations on bids.
6. --By asking for bids in April or even earlier, the work load of the dealer is more evenly distributed which is reflected often in a better price.
7. Bid bonds or checks from reputable dealers are really not necessary. They merely add one more item to the cost to be met by the dealer (7:9,40).

Summary

The compilation of ideas and suggested methods for

budgeting, handling of funds, and methods of disbursement discussed in the literature presented numerous desirable factors on which an industrial arts instructor might base his policies and procedures. These ideas, plus the findings of the survey, could be of valuable assistance to the industrial arts instructor in the State of Washington.

CHAPTER III

METHODS AND MATERIALS USED IN THE SURVEY

The writer selected the specific area in industrial arts to be surveyed and chose the questionnaire medium to obtain exact facts and figures and to provide descriptions, techniques, and policies currently used by industrial arts teachers in the State of Washington.

The Questionnaire

The three-page questionnaire was divided into three main areas: (1) Industrial Arts Budget, (2) Method of Collecting Money From Students, and (3) Disbursing Methods Used by Industrial Arts Instructors. It also included a section requesting general information. The main body of the instrument contained twenty-three questions. Three of the questions were open and required written answers while four required figures. The remaining questions required only a check mark.

The writer developed a large chart, approximately three feet wide and four feet long. Vertical lines spaced across the face of the chart left an appropriate space for the answer to each question. Horizontal lines were constructed across the face of the chart. The names of the instructors returning questionnaires were placed on the horizontal lines

down the left hand margin of the chart and their answers were placed in appropriate spaces. When the questionnaires were returned, the information was posted on the chart.

The main body of the thesis was developed around information registered on the chart. Tabulations and the basis for comparisons were established according to the information posted.

The Letter of Transmittal

An introductory letter accompanied each questionnaire. Its purpose was to identify the investigator, present the reason for the questionnaire, and request the cooperation of the recipient. A self-addressed, stamped envelope accompanied each questionnaire.

The Follow-up Card

One hundred-fifty questionnaires were mailed to selected industrial arts teachers throughout the state of Washington on March 19, 1961. Four weeks after the initial mailing of the instrument, 35 follow-up cards were sent out.

Although a good response was received to the initial mailing of the questionnaire, the writer desired to stimulate additional participation if possible. Twenty-three of the recipients of the follow-up cards, or 66 per cent, returned their questionnaires. One hundred-eleven, or 74 per cent,

of the questionnaires were returned by June 1, 1961.

Mailing List

The school districts of the state of Washington were divided into five categories according to the number of industrial arts instructors employed. Category one included districts with 16 or more industrial arts teachers. Category two was made up of districts having 10 to 15, category three included districts employing 5 to 9, category four of districts with 2 to 4, and category five contained districts with one industrial arts teacher.

The 1960-61 Washington Directory of Industrial Arts Teachers was used as a basis to establish the five categories and selection of 150 teachers. Thirty-four questionnaires were mailed in category one, 22 in category two, 43 in category three, 28 in category four, and 23 in category five.

CHAPTER IV

THE QUESTIONNAIRE RESULTS

The findings of the survey will be presented in three parts based upon the divisions of the questionnaire. The sequence will be: (1) the industrial arts budget, (2) methods of collecting money from students, and (3) the disbursing methods used by industrial arts instructors.

Classification of Results

The information gathered from the questionnaire and recorded on a large 3' x 4' chart furnished the basis for survey results. These include the over-all findings of the five categories of industrial arts personnel as one inclusive group. Tables showing the tabulated survey results of the questionnaire, comparing each of the five categories, will be included in the text of the thesis.

The Data presented were tabulated on the basis of information provided by the 110 who returned questionnaires. One questionnaire was returned after the tabulations were completed; it was not included. This would raise the total instruments received to 111 (74 per cent).

The five categories established in terms of the number of industrial arts teachers in individual districts and the number of questionnaires returned in each category

is as follows:

No. 1--16 or more I.A. teachers: returned 21 of 34 questionnaires.
No. 2--10 to 15 I.A. teachers: returned 15 of 22 questionnaires.
No. 3-- 5 to 9 I.A. teachers: returned 30 of 43 questionnaires. One was returned too late to tabulate.
No. 4-- 2 to 4 I.A. teachers: returned 24 of 28 questionnaires.
No. 5-- 1 teacher of I.A.: returned 21 of 23 questionnaires.

By developing the categories around the number of industrial arts teachers in a district rather than by districts of their classification, it was felt that a more comparative study could be made concerning teacher responsibilities and district policies across the State of Washington.

I. THE INDUSTRIAL ARTS BUDGET

The budget for the industrial arts department may often determine the degree of success of the program. Each district should show a definite budget figure arrived at through an established method so that the department will always receive an equitable share of the school funds.

Methods Followed to Determine Industrial Arts Appropriations per Year

Data gathered regarding the industrial arts budget revealed that 55 (50 per cent) of the 110 participants were operating their industrial arts program on a planned budget. (Table I). Programs operated on a definite budget established through a set formula usually showed the funds to be adequate.

Data furnished by several industrial arts teachers provided definite formulas for estimating budget needs. The following selected methods were included in the group:

1. a. Resale Budget--$1.25 plus the average resale times the number of pupils.
   b. Small Tools--Lump sum based on previous needs.
   c. Repair and Replacement of Tools--Lump sum based on previous needs. (Previous year's needs based on requisitions and work orders).

2. Each unit shop calculates their budget in the following manner:
   a. Number of students times 180 days equals student hours.
   b. Student hours times .020, cost per student hour, equals the budget. (Cost per student hour varies for different shops from .010 to .06).

3. a. Material budget equals expenditures for the previous year plus 20 per cent.
   b. Tool replacement equals number of students the previous year times $2.00. (We are given a certain amount for the entire school district for all shops. The individual shops are prorated on the basis of enrollment. Eighty per cent minimum of the amounts budgeted must be returned to the district by the end of the year).

4. Budget is based on expansion needs and replacement needs. Budget depends on available funds. We include new equipment, repair, replacement, student project supplies, and surplus property in our budget. Students must pay cost of project materials.

5. a. Keep track of all expenditures the previous year.
   b. Resale materials equals $2,500.00.
   c. Small tools equals $500.00.

6. a. Reimbursable supplies equal $2.50 per student per year.
   b. Non-reimbursable equals $.50 per student per year.

7. No planned budget--No limit placed on purchase of supplies. Equipment (both new and replacement) purchased according to need.

Some reported they were operating on a planned budget, but the amount had remained the same for many years and was not sufficient to provide a satisfactory program.

Most reporting an inadequate budget showed no formula used or no definite amount of money provided. Thirty-five (32 per cent) of the instructors or departments were operating on this type of budget.

Data revealed 9 instructors (8 per cent) whose allotment depended upon the decision of the principal, superintendent, budget director, or upon the teacher's agressiveness.

Following is a typical example of the principal controlling the funds:

> The business director allows the building principal a stipulated sum each year, which he apportions to each

department within his school. The amount the department receives depends upon the demands of other departments within the school.

Additional data, Table I, revealed that 64 (58 per cent) of the teachers felt their budget allowance to be adequate, while 31 (28 per cent) considered their budget inadequate. Fifteen (14 per cent) did not disclose their views.

Budgeting for New Machines, Tools, and Equipment in New Shops

Many teachers reportedly lacked the necessary information to answer. Basically, they were unaware of this information because it was managed in the business office or on the administrative level. In addition it should be stated that all equipment purchased for new shops in new buildings is paid for out of capital outlay or the building fund.

Budgeting for New Machines, Tools and Equipment to Replace Old and Worn Equipment.

This should be a definite part of any industrial arts' budget. It should be respected and always be based on actual need. This writer has observed numerous shops throughout the state where dated equipment was still in use despite its worn and unsafe condition. This condition frequently exists because the administration did not provide

TABLE I

THE STATUS OF THE INDUSTRIAL ARTS' BUDGET
AS REPORTED BY TEACHERS SURVEYED

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Budget control reported by teachers							
Set Budget	11	13	14	12	5	55	50
No set budget	2	1	13	6	13	35	32
Principal	4	1	0	2	2	9	8
Unknown	4	0	2	4	1	1	10
Part 2. Use of formulas for establishing the budget							
Formula	8	12	15	6	2	43	39
No formula	5	1	12	13	17	48	44
Unknown	8	2	2	5	2	19	17
Part 3. Adequacy of the budget							
Adequate	12	13	16	12	11	64	58
Inadequate	3	0	11	8	9	31	28
Unknown	6	2	2	4	1	15	14

for repair and replacement in the budgeting process.

Table II reveals that 27 (25 per cent) of the participants always budget to replace old or worn equipment. Forty-one (37 per cent) never include this item in their budget.

Budgeting for New Machines, Tools and Equipment to Supplement Present Equipment

The number who reported that their district always or occasionally budgeted a certain amount for this item was nearly identical. Table II shows 28 (25 per cent) always budget this item while 27 (.245 per cent) occasionally include funds for this purpose.

Budgeting for Resale Material

Materials sold to students are considered by this writer to be the very core of most industrial arts courses. If school districts provide money for no other items in their industrial arts budget, funds should be provided for resale materials.

Often this item is not budgeted, and it is then necessary for the industrial arts instructor to do one of three things. Classes are based entirely on theory, students are required to furnish their own materials from other than school sources, or the industrial arts instructor

TABLE II

SURVEY RESULTS OF BUDGETING FOR NEW MACHINES, TOOLS, AND EQUIPMENT

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Budgeting to equip new shops							
Always	3	6	2	5	0	16	15
Occasionally	2	4	7	2	3	18	16
Never	11	3	13	12	12	51	46
Unknown	5	2	7	5	6	25	23
Part 2. Budgeting to replace old and worn equipment							
Always	2	9	7	4	5	27	25
Occasionally	5	4	8	5	6	28	25
Never	8	1	13	10	9	41	37
Unknown	6	1	1	5	1	14	13
Part 3. Budget to supplement present equipment							
Always	4	8	7	7	2	28	25
Occasionally	6	5	3	6	7	27	25
Never	5	1	13	8	10	37	34
Unknown	6	1	6	3	2	18	16

may sell shop cards to students at the beginning of the term. When funds have been collected, the teacher will then know how much is to be spent on resale material.

Forty-nine (45 per cent) of the individuals questioned always budget funds for resale material. In contrast, 46 (42 per cent) never budget for this item. This information is shown in Table III.

Budgeting to Balance the Resale Material Account

Funds collected by the industrial arts department from resale materials are credited toward their account only on paper. These funds do not return specifically to the departmental account. Credit is given to the department, but the actual funds return to the school district's general fund.

In May, when the preliminary budget is being established, the money required to balance the resale material account may be determined by checking last year's appropriation plus the credit to the account through the past year.

Data furnished in the survey results show the varying degrees of returns on resale material expected by industrial arts instructors. Some instructors are required to return up to 100 per cent; most said the amount was at least 80 per cent or more.

Table IV reveals 53 (48 per cent) teachers reporting that their district always budgets to balance the resale

TABLE III

SURVEY RESULTS PERTAINING TO BUDGETING OF A SPECIFIC AMOUNT EACH YEAR FOR RESALE MATERIALS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	11	11	12	7	8	49	45
Occasionally	1	1	0	4	1	7	6
Never	5	3	16	11	11	46	42
Unknown	4	0	1	2	1	8	7

account. The table also shows that 41 (37 per cent) never provide such funds.

Budgeting for Expansion of Present Facilities

In answering the question as to whether the industrial arts budget would increase in the next two years because of expansion of present facilities, 31 (28 per cent) teachers said "yes." This would involve adding new industrial art facilities to school structures which already exist. In contrast, 58 (53 per cent) answered "no" to the question while 21 (19 per cent) replied they did not know. This information is shown in Table V.

Budgeting for New Schools with Shops

The number of teachers replying "yes" to the question of whether the industrial arts budget would increase in the next two years because of the addition of new schools with shops was 44 (40 per cent). Table V also shows that 46 (42 per cent) answered "no" to this question. Twenty were unable to answer because they lacked knowledge of school plans.

Remodeling of Present Industrial Arts Plant

According to the survey reports, 15 (14 per cent) stated that their budget will be increased in the next two

TABLE IV

DISTRICTS WHICH BUDGET FUNDS FOR THE PURPOSE OF BALANCING THE RESALE MATERIAL ACCOUNT

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	11	11	12	10	9	53	48
Occasionally	2	0	3	3	0	8	7
Never	3	4	14	9	11	41	37
Unknown	5	0	0	2	1	8	8

years because of the remodeling of the present plant. In comparison, 70 (64 per cent) stated "no" to this question. (Table V).

II. COLLECTION OF FUNDS FROM THE SALE OF INSTRUCTIONAL MATERIALS

Handling funds collected from students to pay for materials used in constructing their projects is both time-consuming and an added responsibility for the industrial arts teacher. Individual district policies decide the extent of the industrial arts teacher's responsibility in conducting this activity. He may have the entire responsibility or handle only a portion of the operation.

The Degree of Teacher Responsibility

Survey results reveal that 63 (57 per cent) always have sole responsibility for collecting and turning in money from the students. This information is provided in Table VI.

Instructors report handling this operation in the following ways:

1. Students maintain a project material card, under the supervision of the teacher or student helper, and pay the total amount due at the close of the semester.

TABLE V

REASONS THE INDUSTRIAL ARTS' BUDGET
WILL BE INCREASED IN THE
NEXT TWO YEARS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Expansion of present facilities							
Yes	3	6	8	8	6	31	28
No	13	5	14	13	13	58	53
Unknown	5	4	7	3	2	21	19
Part 2. New schools with shops							
Yes	10	10	12	10	2	44	40
No	6	2	11	12	15	46	42
Unknown	5	3	6	2	4	20	18
Part 3. Remodeling of present plant							
Yes	4	4	3	0	4	15	14
No	10	7	19	19	15	70	64
Unknown	7	4	7	5	2	25	22

2. Students develop a bill of materials for each project. Some instructors require payment of project cost before construction begins, as materials are acquired, or when the project is completed and before it is taken home.
3. Instructor sells shop credit cards to the students during the opening of the semester. Additional cards are sold later if necessary.

Nineteen (17 per cent) instructors said they occasionally have the entire responsibility for collecting and turning in money from students. The operation is very often shared with the book store, office staff, or business manager.

Instructors report handling this operation in many ways. The following is an example:

The teacher collects from the students at the begining of each semester during the initial purchase of shop credit cards. Stragglers and new students must go to the S.B.A. office to make their purchase of cards. If students over exceed their card value they will purchase an additional card through the S.B.A. office, school office or business manager. Often, the teacher will make the collection.

Teachers never responsible for collecting and turning in money from the students numbered 24 (22 per cent). This, of course, does not mean they have no responsibility whatso-

ever in the transaction, only that they are not required to handle money in their industrial arts courses. The writer thinks this is the ideal method. (See Table VI).

The survey revealed the following as methods in which the teacher handles no money:

1. Students purchase shop credit cards during the beginning of the semester. Purchases in this situation are made through the bookstore, from some member of the office staff or from the business manager. If additional cards are needed they are procured from the same source. Teachers may keep the cards in their possession and maintain the value as students use materials, complete a project or complete the semester's work.

2. A. A credit system is established. Students may maintain a project record card, which will list projects made, plus materials and supplies they used to construct their projects. Payment may be made when the semester terminates, or during the semester a partial payment may be required if the bill becomes excessive.

   B. The teacher sometimes maintains a record book listing each student, his projects and materials and supplies. At the close of the semester the

TABLE VI

THE INDUSTRIAL ARTS TEACHER HAVING THE SOLE RESPONSIBILITY FOR COLLECTING AND TURNING IN MONEY FROM STUDENTS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	11	7	18	15	12	63	57
Occasionally	4	3	4	3	5	19	17
Never	6	4	6	4	4	24	22
Unknown	0	1	1	2	0	4	4

student is given his bill and payment is made in the bookstore or to some member of the office staff. A partial payment may be made during the semester if necessary.

C. [One instructor reported he used] the credit system and assigned a reliable student to the task of maintaining the records. The student manager collects the money, gives the receipt, and keeps records of all purchases made in the shop. In this case a return as high as ninety-five per cent was made to the school.

The student may be asked to place a deposit with the school at the beginning of the semester. If this prior payment is not required, possibly a partial payment sometime in the middle of the term might be asked for. However, student bills which do not become excessive would be collected at the close of the semester.

Student Deposits in Industrial Art Classes

The policy of requesting students to deposit a certain amount of money at the beginning of the semester (in various industrial art courses) varies among instructors and districts.

The purpose of the deposit is twofold: (1) In different industrial arts courses students will use a variety of supplies in the construction of their projects. As these are supplies each student will undoubtedly use before the semester is over, each student is requested to pay an equal portion of the anticipated material cost. The early deposit may be requested to cover this charge. (2) Course deposits not required for a shop charge are credited toward the students project material bill.

Survey results show that 34 (31 per cent) instructors require a course deposit in the required class. Thirty-eight (36 per cent) require a deposit in their elective courses. (Table VII).

Maintaining the Student Cost Sheet

Student records are maintained in a variety of ways. The policy in large districts is generally established by the director or supervisor of industrial arts. A printed record card is often provided. However, teachers may deviate from this standard form and develop a method which meets the course situation. The method of collecting money from students very often determines the type of record maintained to show student projects and materials.

Survey results, shown in Table VIII, reveal that 55 (50 per cent) instructors have students maintain a running

TABLE VII

STUDENT DEPOSITS REQUIRED IN INDUSTRIAL ARTS COURSES

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Required courses							
Yes	8	5	8	6	7	34	31
No	10	9	16	18	12	65	59
No reply	3	1	5	0	2	11	10
Part 2. Elective courses							
Yes	8	7	6	8	9	38	36
No	11	7	19	14	8	59	54
No reply	2	1	4	2	4	13	12

cost sheet of some sort and paying all of their bill at the end of the semester. Twenty teachers report they occasionally follow this procedure while 30 reported they never follow this plan.

Industrial Arts Material Ticket

The questionnaire brought out the fact that 55 (50 per cent) teachers always require students to purchase industrial arts material tickets. Teachers who occasionally require such purchases numbered 6 (5 per cent), while 47 (43 per cent) stated they never use this system. (Table IX). Districts using the material ticket set their value anywhere from one to five dollars.

Where material tickets are used, Table X points out that 22 (20 per cent) instructors sell them to students. Table X also shows that in 35 (32 per cent) of the schools the staff in the principal's office handles the sales. The bookstore supervises the sale in 8 (7 per cent) schools. One teacher reported the bookkeeper managed material ticket sales.

Table XI shows that 29 (26 per cent) teachers felt the cash system was the most desirable. In contrast, 65 (59 per cent) favored the material ticket procedure. Teachers who favored other methods totaled 16 (15 per cent).

TABLE VIII

STUDENTS ARE REQUIRED TO MAINTAIN A RUNNING COST SHEET AND PAY ALL OF THEIR BILL AT THE END OF THE SEMESTER

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	11	8	13	14	9	55	50
Occasionally	4	2	6	5	3	20	18
Never	6	3	8	4	9	30	27
No reply	0	2	2	1	0	5	5

TABLE IX

STUDENTS ARE REQUIRED TO BUY A SHOP MATERIAL TICKET

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	17	5	10	12	11	55	50
Occasionally	0	0	3	2	1	6	5
Never	4	9	15	10	9	47	43
No reply	0	1	1	0	0	2	2

Many teachers stated that any system other than handling cash would be desirable; still others felt strongly against the material ticket system. Several favored using a combination of both systems, the determing factor being the type of course involved.

Student Material Cost

In those industrial arts courses where materials and supplies are necessary, there are several additional costs. Very often prices of material and supplies are raised to include the freight cost. Also in various classes there is much waste in material. Since this material must be paid for, the price the student pays is raised.

The survey showed that 20 (18 per cent) instructors never raise their material prices above actual cost. Possibly this is because of the material used in the course or the source of supply. Table XII also shows that 8 (7 per cent) teachers vary their prices above the actual material value from 5 to 30 per cent. Teachers who generally increase the basic price from 1 to 10 per cent totaled 43 (39 per cent). Thirty-three (31 per cent) instructors reported they increase their basic price from 11 to 25 per cent. Six teachers reported they use a 25 per cent increase or more.

Average Student Industrial Arts Cost

TABLE X

SOURCES FROM WHICH STUDENTS MAY PURCHASE MATERIAL TICKETS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Teacher	9	1	5	5	2	22	20
Principal or Office	5	4	5	11	10	35	32
Book store	4	1	3	0	0	8	7
Non-applicable	3	9	16	8	9	45	41

TABLE XI

METHODS CONSIDERED TO BE MOST DESIRABLE FOR HANDLING STUDENT MATERIAL FUNDS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Cash	4	3	11	7	4	29	26
Material ticket	17	8	13	13	14	65	59
Other	0	4	5	4	3	16	15

Table XIII shows the average cost per student for the various industrial arts courses. Figures furnished in the survey ranged from $1.05 per student to a high of $9.51.

Student Lack of Funds for Project

The problem of students being unable to pay their project material bill because of lack of funds at home is often given special consideration. If such a problem exists, a compatable solution usually can be worked out with the student in a conference with the school principal or vice principal and the classroom instructor. Many teachers reported they had never had this situation arise.

Solutions to the problem revealed in the survey answers are as follows:

1. Use scrap material donated from local sources.
2. Find some work to do for the instructor.
3. Construct projects for teachers or others who will pay for materials.
4. Do work for the school.
5. Allow them a reasonable project to make at the schools expense.
6. Get them to bring in old radios and furniture.
7. Work for the school, such as in the cafeteria to raise project funds.
8. Funds often provided through the P.T.A. or other social organizations.
9. Deduct material cost from book deposit.
10. Put projects up for sale.

Students Unwilling to Pay

Occasionally the industrial arts instructor is faced with a student who will accumulate a project material bill

TABLE XII

THE PER CENT ABOVE ACTUAL MATERIAL COST PRICES ARE RAISED TO STUDENTS TO COVER SHIPPING AND WASTE FACTORS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Per Cent of increase							
None	1	2	8	3	6	20	18
Varies	2	0	2	1	3	8	7
1 to 5	2	2	4	7	4	19	17
6 to 10	3	5	6	6	4	24	22
11 to 15	5	4	2	2	1	14	13
16 to 20	3	0	5	3	3	14	13
21 to 25	2	1	1	1	0	5	5
26 and up	3	1	1	1	0	6	5

TABLE XIII

ESTIMATE OF THE AVERAGE COST TO STUDENTS PER SEMESTER IN VARIOUS CLASSES

Teacher Categories:	I	II	III	IV	V	Average
Part I. Junior High classes						
Wood	4.56	4.25	4.44	5.30	3.35	4.38
Metal	2.70	2.37	1.85	2.70	0	2.41
Craft	2.92	2.00	2.00	5.00	1.80	2.74
Electricity	2.00	1.12	1.31	0	0	1.48
Mech. Draw.	2.25	.90	.75	1.10	.25	1.05
Automotives			3.00			3.00
Part 2. Senior high classes						
Wood	9.29	11.67	11.07	7.70	7.84	9.51
Metal	5.70	2.00	5.17	4.60	3.80	4.25
Craft	7.40		5.00	7.17	4.25	5.96
Electricity	8.00		3.00	5.00	15.00(Radio)	7.75
Mech. Drawing	3.27		1.50	1.85	2.00	1.72
Automotives	13.00		20.00	12.00		2.16

for which he will not pay. The student has access to funds to meet the expense but will not use them.

In such situations the following procedures were generally followed:

1. Projects were held.
2. Notify the parent.
3. Class grade and credit held.
4. Hold report card.
5. Hold book deposit.
6. No diploma on graduation.
7. No transcripts.
8. Bill attached to permanent record.
9. No more material; required to drop course.
10. Projects are sold to cover the material cost.

III. DISBURSING METHODS USED BY INDUSTRIAL ARTS INSTRUCTORS

The expenditure of money appropriated for operating the school's industrial arts program should be well-organized and understood by all individuals associated with the program. The methods used should facilitate the maintenance of accurate records. Policies governing disbursing methods should require a limited amount of paper work and a minimum amount of personnel time. The number of persons involved in the handling of expenditures should be limited.

Purchases by Cash or Check

The survey disclosed that only 3 instructors handle cash or checks from the principal or business office for all

purchases of industrial arts items. Eight instructors stated they occasionally handle these purchases with cash or check. Table XIV shows that 91 teachers never make direct purchases with cash or check.

One teacher reported he always purchases direct and is limited to no definite amount, but the superintendent must give his approval. Another instructor is permitted to make cash purchases limited to ten dollars.

Purchases by Requisition

The most widely followed purchasing policy reported in the survey was a requisition procedure. This method of indirect buying requires the industrial arts teacher to make out a standard school district purchasing form. Often the instructor will supply the school secretary with a list of items to order and she will fill out the purchasing form. Regardless of who fills out the form, it must go through administrative channels for approval.

The instructor will receive a copy of the purchase order, and with the arrival of the purchased supplies the order should be marked "received" and returned to the superintendent's office. Purchases paid for within a certain time often are subject to a discount which should be taken advantage of.

TABLE XIV

DIRECT PURCHASING BY INDUSTRIAL ARTS TEACHERS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	0	0	2	1	0	3	3
Occasionally	1	1	2	2	2	8	7
Never	20	13	21	19	18	91	83
No Reply	0	1	4	2	1	8	7

In an emergency, the instructor may personally carry the form through channels, make the purchase, and return the completed order to the purchasing department. This is not a recommended procedure, and pre-planning should eliminate its necessity.

The purchasing policy of some districts follows the requisition procedure but permit teachers to make limited direct purchases, for which receipts and records must be maintained. One instructor stated he has an open account at various places for repair of machines and small purchases.

The survey results revealed 89 (81 per cent) instructors who follow the requisition procedure and 15 (14 per cent) who occasionally use it. Instructors not involved with this procedure numbered 4 (4 per cent). (Table XV).

Emergency Cash Funds

School district funds at all times should be accounted for, not only because it is a public institution, but because it is a good business practice. If accounting is to remain financially correct, it should be conducted in a business-like manner.

Because the industrial arts program requires supplies, materials, tools, equipment, and very often repairs on equipment and tools, the instructor is on occasion authorized to maintain a cash fund. This fund should be used only for

TABLE XV

PURCHASES TRANSACTED THROUGH
A REQUISITION PROCEDURE

Teacher Categories:	I	II	III	IV	V	Total	Per cent
Always	21	14	22	18	14	89	81
Occasionally	0	1	5	4	5	15	14
Never	0	0	1	1	2	4	4
No Reply	0	0	1	1	0	2	1

the specific needs referred to above. Definite and accurate records should be maintained and limitations placed on the amount authorized. In the survey, 7 (6 per cent) teachers said they maintained such a fund. Table XVI shows that 6 (5 per cent) teachers occasionally maintain an emergency cash fund, whereas 72 (65 per cent) never maintain an authorized fund. Teachers who did not disclose if they maintained an authorized fund numbered 25 (24 per cent).

The purchasing policy employed by the school district and the manner in which it is conducted often induce the industrial arts instructor to maintain an unauthorized emergency fund. This is definitely illegal.

The amount of paper work involved in ordering supplies, the period of time before they arrive, the degree of purchasing restrictions, and the personal attitude of individuals involved all tempt the industrial arts teacher to maintain an unauthorized emergency fund. The writer does not recommend this, but realizes that on occasion and in certain situations many instructors do maintain an unauthorized emergency fund.

A more desirable policy would be to have the school district maintain one or more open accounts where the industrial arts instructor could fill necessary and emergency needs. If this policy were established there would be no need for the

instructor to retain emergency funds, authorized or unauthorized.

Only 5 teachers (5 per cent) reported that they do maintain an unauthorized fund. In addition, as shown on Table XVI, 21 (19 per cent) occasionally establish such a fund, while 55 (50 per cent) never maintain an unauthorized fund. Twenty-nine teachers did not disclose whether they did or did not maintain such a fund.

Discounts on Industrial Arts Purchases

Public schools, a service to the public, are a non-profit organization. They depend upon local, state, and in some cases federal funds for support. This necessitates school officials to acquire quality merchandise at the lowest possible price.

The limited amount of the industrial arts department budget generally encourages the buyer to find a source offering a discount. An industrial arts director in one of Washington State's larger city districts reported seldom receiving discounts on new equipment. The reason is that the dealers have an agreement whereby if one dealer sells a specific make of machine at a discount, he must share his profit with co-dealers of the same item. If the school district has some piece of equipment to use as a trade-in, the dealer is not held to the profit-sharing pact and may establish a

TABLE XVI

EMERGENCY FUND MAINTAINED BY THE INDUSTRIAL ARTS INSTRUCTOR

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Authorized Emergency Fund							
Always	1	0	1	2	2	7	6
Occasionally	1	1	1	1	2	6	5
Never	14	10	19	16	13	72	65
No Reply	5	4	7	5	4	25	24
Part 2. Unauthorized Emergency Fund							
Always	2	0	2	1	2	5	5
Occasionally	6	5	5	2	7	21	19
Never	10	8	15	13	8	55	50
No Reply	3	2	7	9	9	29	26

desirable deal.

The survey revealed that 72 (65 per cent) teachers always strive to obtain a discount. Table XVII shows that 26 occasionally look for and receive a discount.

Bids on Industrial Arts Purchases

The 1961 Washington State Legislature established a law requiring school districts to obtain bids on purchases of twenty-five hundred dollars or more. Individual school districts are allowed to establish their own policy on amounts under this figure.

A discussion of this topic with the industrial arts director of a large Washington city school district brought out that his district invites firms who wish to furnish bids on items to register with the district purchasing agent. These firms will then be notified of materials and supplies the school district intends to buy.

This school district's policy reserves the right to reject or accept any or all bids. Bids received are tabulated and the lowest bid of quality material which meets the desired specifications is accepted. It is the policy of this particular district to obtain bids on purchases of one-thousand dollars or more.

In the survey answers 27 (25 per cent) teachers are in

TABLE XVII

DISCOUNTS SOUGHT AND RECEIVED ON PURCHASES OF INDUSTRIAL ARTS ITEMS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	14	10	18	16	14	72	65
Occasionally	4	5	5	6	6	26	24
Never	0	0	1	1	1	3	3
No Reply	3	0	5	1	0	9	8

districts which require bids on any and all equipment. Teachers in districts requiring bids on items of fifty dollars or more numbered 14 (13 per cent) as shown on Table XVIII. In addition, 17 (16 per cent) reported their district required bids on items of one-hundred dollars or more and 5 that their districts requested bids on items of one-thousand dollars or more.

Source of Materials and Supplies

County or individual school district warehouses are depended upon for all materials and supplies used in the industrial arts programs of 14 (13 per cent) teachers surveyed in the State of Washington.

Outside sources, other than school operated, are depended upon by 49 (45 per cent) instructors for materials and supplies. (Table XIX). This outside source could be most anywhere in Washington or the United States. However, Table XIX shows that 29 (26 per cent) teachers who buy from an outside source use a local source.

Teachers who may purchase from either a school operated warehouse or an outside source numbered 20 (18 per cent). Materials or supplies ordered from either the school source or the outside source are ordered on the same type requisition and go through the same channels, but their accounting numbers are different.

TABLE XVIII

SCHOOL DISTRICT POLICY RELATED
TO BID REQUIREMENTS

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. Required to seek bids on all equipment							
Always	7	5	10	1	4	27	25
Occasionally	2	0	2	2	5	11	10
Never	4	4	7	7	7	29	26
No Reply	8	6	10	14	5	43	39
Part 2. Bids required on purchases of $50.00 or more							
Always	3	3	2	3	3	14	13
Occasionally	3	2	1	1	4	11	10
Never	3	2	5	6	7	23	21
No Reply	12	8	21	14	7	62	56
Part 3. Bids required on purchases of $100.00 or more							
Always	8	2	1	5		17	15
Occasionally	0	0	0	4		9	8
Never	3	2	5	3		19	17
No Reply	10	11	23	12		65	59

Government surplus stocks are a source of tools, equipment, materials, and supplies. Many school dollars may be saved on purchases through this source, although there are some disadvantages in its use. Sometimes the location of the school district does not merit the use of this source. Often funds are not available to make purchases when items desired by the school are in stock. One must keep in contact and know when materials and supplies are available to really benefit from this source.

The survey report shows only 6 teachers always check this source of supply for school industrial arts supplies. Table XIX points out that 55 (50 per cent) occasionally make purchases from government surplus sources.

In order for the industrial arts department to take full advantage of government surplus purchases, a designated purchasing agent should be appointed. He would be familiar with all industrial arts department needs, and when he finds items available he would have the authority to make on-the-spot purchases.

Extended Contracts for Industrial Arts Teachers

The industrial arts instructor's position involves many responsibilities other than instruction. In addition to participating in establishing the budget, handling of

TABLE XIX

SOURCES OF SUPPLIES AND MATERIALS FROM WHICH INDUSTRIAL ARTS INSTRUCTORS ORDER

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part I. School District Warehouse							
Always	12	0	1	0	1	14	13
Occasionally	2	5	10	1	0	18	
Never	1	2	2	2	5	12	
No Reply	6	8	16	21	15	66	
Part 2. Outside Sources							
Always	7	3	13	15	11	49	45
Occasionally	7	7	7	5	8	34	31
Never	1	1	2	1	0	5	4
No Reply	6	4	7	3	2	22	20
Part 3. Combination of 1 and 2.							
Always	8	5	5	2	0	20	18
Occasionally	3	3	7	0	1	14	13
Never	2	0	1	1	2	6	5
No Reply	8	7	16	21	18	70	64

TABLE XIX (continued)

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Part 4. Government Surplus Stock							
Always	3	0	2	0	1	6	6
Occasionally	9	9	11	13	13	55	50
Never	3	1	2	0	2	8	7
No Reply	6	5	14	11	5	41	37
Part 5. Local Sources							
Always	4	3	9	4	9	29	26
Occasionally	8	7	10	17	12	54	49
Never	1	0	1	0	0	2	2
No Reply	8	5	9	3	0	25	23

student funds or records, and participating in the disbursement of funds, the industrial arts instructor must maintain an inventory and carry out a maintenance program on tools and equipment. All of these added responsibilities require a great deal of time and thought.

The survey shows that only 8 teachers of the 110 who replied receive consideration and extra money in the form of an extended contract to accomplish the added responsibilities connected with their job. One instructor said he is granted an additional three days; one other revealed that his contract included two weeks for maintenance work. Twenty days was added to still another teacher's contract. One instructor stated he received full summer's job doing maintenance work for his district.

Ten instructors, as shown in Table XX, occasionally are provided with extra days for which they are reimbursed.

It is the obligation of 90 teachers (82 per cent) to accomplish all of their work within the limits of their contract. Many instructors reported it is impossible to accomplish all of their responsibilities during regular school hours. It is necessary for them to devote many extra hours throughout the school year to their added duties.

TABLE XX

INDUSTRIAL ARTS INSTRUCTORS ALLOWED EXTRA DAYS UNDER CONTRACT TO PERFORM ADDITIONAL DUTIES

Teacher Categories:	I	II	III	IV	V	Total	Per Cent
Always	1	1	0	3	3	8	7
Occasionally	3	3	2	2	0	10	9
Never	17	11	25	19	18	90	82
No Reply	0	0	2	0	0	2	2

CHAPTER V

I. SUMMARY AND CONCLUSIONS

The purpose of this study was to obtain an understanding of current practices and procedures in the industrial arts programs throughout the State of Washington and to provide data concerning the establishment of the budget, collecting and handling of money, and expenditure of the budget funds.

The additional duties of the average industrial arts instructor are aided or impeded by the policies prevailing in his district, by the instructor's own ingenuity, and through the cooperation and respect he receives from his associates.

Fifty-five (50 per cent) of the teachers surveyed revealed their budget appropriation to be adequate to maintain a desirable industrial arts program. This group uses a formula method and budgets a definite amount for the industrial arts department each year. In comparison, 35 (32 per cent) instructors were operating their program without a planned budget. The money they operated on came from the sale of material tickets and funds appropriated by the superintendent or principal. Many industrial arts programs were operating with no allowances made for growth

and improvement.

In handling student funds, the investigation revealed that many teachers felt any system other than handling cash would be more desirable. This system could be carried out by requiring no charges in industrial arts courses, by having students use material tickets bought in the office or bookstore, or through the students making payment for materials directly to the office or bookstore.

In comparing survey results, 63 (57 per cent) of the 110 teachers always are responsible for collecting and turning in industrial arts funds from students. Instructors who occasionally have this duty numbered 19 (17 per cent). Twenty-four (22 per cent) reported they are never responsible for collecting and turning in money from students. (They do maintain records reflecting the amount of the student's bill). The significant factor is that they are not required to handle money in the classroom.

The investigation disclosed that only 3 instructors handle cash or check directly from the principal or business office for all purchases of industrial arts items. Eight teachers reported they use this procedure occasionally.

The method of purchasing by requisition was reported to be followed extensively by 89 (81 per cent) of the teachers surveyed. This method of buying materials requires

some paper work, but the instructor does not have to take personal time to make purchases. The advantage of the requisition form method is that accurate records may be maintained; the disadvantage is that the requisition procedure requires a period of time for the paper work to be processed, the purchases to be made, and the delivery of the supplies and materials.

In districts with slow purchasing methods, teachers are inclined to maintain emergency cash funds, authorized or unauthorized. Definite and accurate records should be maintained for the protection of the teacher when these funds exist. A desirable method would be to have the school district maintain one or more open accounts so that the industrial arts teacher could fill necessary and emergency needs of his program.

Discounts on industrial arts purchases should be encouraged. The request for bids on supplies, materials, and equipment often results in reduced prices. The bid request form should state that the school district reserves the right to reject or accept any or all bids in order to protect itself from having to purchase inferior merchandise.

Government surplus material is still a desirable source for industrial arts materials, tools, and equipment. However, the district must have easy access to this source,

and one person with an industrial arts background should be authorized as a purchasing agent.

Industrial arts instructors, because of the nature of their work, have many responsibilities beyond those of instruction. They are called upon to participate in establishing the industrial arts budget and to maintain records of supplies and materials in the classroom. Generally they are responsible for handling of student industrial arts funds, and they participate in ordering materials and supplies. Also, they are obligated to maintain an accurate inventory and carry out a maintenance program on tools and equipment. The investigation shows that of the 110 teachers surveyed, 90 (82 per cent) are obligated to accomplish these additional duties within the limits of their contract. Many added hours of the industrial arts teacher's personal time is devoted to these tasks.

Because of these added responsibilities beyond the industrial arts teacher's instructional role, this writer feels that an extended contract would be beneficial to both the school district and the instructor. The extended contract might include one week at the close of the school year for tool repair and machine maintenance, ordering of supplies, and the inventory of materials on hand. This could result in untold savings for the school district. A second week

would be advantageous just prior to the opening of the fall term. This time could be devoted to checking in new instructional supplies and additional tools and equipment. Program planning and the construction of instructional aids could be developed at this time.

In conclusion, this writer feels that for an industrial arts teacher to achieve personal satisfaction from his position and to develop a desirable program, the school district's budgetary policy must be definite, clear-cut, and reasonable.

There must be a definite system or formula for establishing the industrial arts budget. This may be facilitated through maintaining accurate records, studying the scope of the industrial arts program, and estimating future needs on the basis of the preceding year's expenditures. The department members should be informed of the budget figure.

The school district policy governing the method of handling student funds received from the sale of instructional supplies should require no money handling by the industrial arts teacher. The teacher should follow some procedure of maintaining accurate records of each student's material bill, but all payments should be made periodically in the office.

The requisition system employed to carry out the

disbursement of industrial arts funds for the purchase of supplies, materials, and equipment is regarded to be most desirable. An additional desirable feature would be to have the school district maintain one or more open accounts so that the industrial arts teacher could fill necessary and emergency needs of his program.

The total school district's financial program should promote excellent esprit de corps among teachers of all departments, administrators, service departments, and areas which effect the school environment.

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APPENDIX A

LETTER OF TRANSMITTAL

March 17, 1961

Dear Sir:

The enclosed questionnaire is partial fulfillment for the Master's degree. This study is limited to selected secondary schools in Washington State to determine the procedures, responsibilities, the progressive methods utilized by Industrial Arts instructors concerning the handling of budget and financial operations.

This study is being co-ordinated under the supervision of Mr. George L. Sogge, Assoc. Professor of Industrial Arts at Central Washington College of Education.

Your assistance and cooperation on the questionnaire will be deeply appreciated. The enclosed stamped envelope is provided for your convenience.

Sincerely yours,

/s/ Carl A. Fulkerson

Carl A. Fulkerson

1514 Nob Hill
Seattle 9, Wash.

APPENDIX B

FOLLOW-UP CARD

Dear Sir:

Recently, I mailed to you a questionnaire pertaining to the field of Industrial arts. I would appreciate your cooperation on the return of this instrument, at your earliest convenience.

Respectfully yours,

/s/ Carl A. Fulkerson

Carl A. Fulkerson

APPENDIX C

THESIS QUESTIONNAIRE

AN INQUIRY INTO THE RESPONSIBILITIES OF WASHINGTON INDUSTRIAL ARTS TEACHERS RELATIVE TO CLASSROOM BUDGETARY AND FINANCIAL PROCEDURES

General Information

Your Name:_____ Title:_____

Name of School:_____ City:_____

School District:_____ Junior High---------[ ]
Senior High---------[ ]

Your School Enrollment:_____ Combination---------[ ]

Total I.A. Enrollment in your School:_____

What Grade Levels Do You Teach? 7, 8, 9, 10, 11, 12
(Circle)

What Type is Your I.A. Program?
Unit Shop [ ] General Unit Shop [ ] General Comprehensive Shop [ ]

I. Industrial Arts Budget

1. Describe the formula employed or method followed to determine the I.A. budget for a given year in your district:

_____
_____
_____

	Always	Occasionally	Never
2. Do you budget a specific amount each year for new machines, tools, and equipment?			
A. To equip new shops	[ ]	[ ]	[ ]
B. To replace old and worn equipment	[ ]	[ ]	[ ]
C. To supplement present equipment	[ ]	[ ]	[ ]
3. Do you budget a specific amount each year for resale materials?	[ ]	[ ]	[ ]

4. Does the district budget funds for the purpose of balancing the resale material account? Always [ ] Occa. [ ] Never [ ]

5. Will the I.A. budget be increased in the next two years because of:

	YES	NO
A. Expansion of present facilities	[ ]	[ ]
B. New Schools with shops	[ ]	[ ]
C. Remodeling of present plant	[ ]	[ ]

II. Method of Collecting Money From Students

1. Does the I.A. teacher have the sole responsibility for collecting and turning in the money from the students? Always [ ] Occa. [ ] Never [ ]

2. Are students required to make a deposit when enrolled in any I.A. class? Required Classes [ ] Electives [ ]

   Title of courses: _____, _____, _____

3. Do students maintain a running cost sheet and pay all of their bill at the end of the semester? [ ] [ ] [ ]

4. Are students required to buy a shop material ticket? [ ] [ ] [ ]

5. In what amounts are material tickets sold?

   _____ _____ _____ _____ _____

6. Students may purchase material tickets from:
   A. Industrial Arts teacher [ ]
   B. Principal [ ]
   C. Book Store [ ]

7. Which do you feel is the most desirable?
   A. Cash system [ ]
   B. Material ticket system [ ]

8. What per cent above actual material costs are prices to students raised, if any? _____%

9. Estimate the average cost to the student in the various classes which you have had experience.

	Junior Hi	Senior Hi
A. Wood Shop		
B. Metal Shop		
C. Crafts		
D. Electricity		
E. Mechanic Drawing		
F. Automotives		

10. What special consideration, if any, is made for students who absolutely cannot pay for their materials?
    A. _____
    B. _____

11. What methods are used to collect money from students capable of paying, but do not pay?
    A. _____
    B. _____
    C. _____

III. Disbursing Methods Used By I.A. Instructors

	Always	Occa.	Never
1. The I.A. teacher handles cash or check from principal or business office for purchases? Maximum amount permitted?_____	[ ]	[ ]	[ ]
2. Purchases are all transacted through a requisition procedure?	[ ]	[ ]	[ ]
3. The I.A. instructor maintains an:			
A. Authorized emergency fund	[ ]	[ ]	[ ]
B. Unauthorized emergency fund	[ ]	[ ]	[ ]
4. Are discounts sought and received on school purchases?	[ ]	[ ]	[ ]
5. Are you required to seek bids:			
A. On all equipment	[ ]	[ ]	[ ]
B. Only on items of $50 or more	[ ]	[ ]	[ ]
C. Only on items of $100 or more	[ ]	[ ]	[ ]

6. The I.A. instructor orders materials and supplies from:
   A. School District warehouse----------[ ][ ][ ]
   B. Outside sources----------[ ][ ][ ]
   C. Combination of A and B----------[ ][ ][ ]
   D. Government surplus stock----------[ ][ ][ ]
   E. Local sources----------[ ][ ][ ]

7. Are I.A. instructors allowed extra days under contract during the summer to perform ordering, maintenance, and inventory responsibility?
   [ ][ ][ ]

APPENDIX D

MAILING DIRECTORY

MAILING DIRECTORY OF WASHINGTON STATE INDUSTRIAL ARTS INSTRUCTORS PARTICIPATING IN THE INVESTIGATION

Category I

NAME	POSITION	DISTRICT
Bippes, Julius O.	Instructor	Fort Vancouver
Chamberlain, D. E.	Instructor	Tacoma
Bromling, Clifford	Dept. Head	Everett
Brooks, Gilbert	Dept. Head	Spokane
Bumgardner, Melvin	Instructor	Tacoma
Chapman, Wayne H.	Dept. Head	Spokane
Coleman, Carl	Instructor	Tacoma
Dickey, Robert	Instructor	Renton
Durand, Joe C.	Supervisor	Highline
Fowler, Eugene	Instructor	Highline
Fox, Dury	Supervisor	Renton
Generaux, Don	Instructor	Vancouver
George, Gary	Instructor	Highline
Greer, E. Y.	Director	Seattle
O'Neill, James O.	Instructor	Vancouver
Rehr, Ronald	Instructor	Tacoma
Smith, Charles H.	Instructor	Tacoma
Theodorson, George	Dept. Head	Spokane
Thiele, James	Instructor	Everett
Thorsen, M. O.	Instructor	Highline
Tigner, Rual	Instructor	Highline

Category II

Barngrover, D. E.	Head of City I.A.	Yakima
Carter, Max G.	Dept. Head	Shoreline
Cary, Jere M.	Instructor	Edmonds
Chapman, Ray B.	Instructor	Bellingham
Hasselberg, Dale	Instructor	Shoreline
Hildreth, George T.	Director Voc.Ed.	Yakima
Hill, Claude	Instructor	Bellevue
Johnson, Iris M.	Instructor	Bellingham
Krieger, George A.	Instructor	Yakima
Magnuson, Earl	Instructor	Bellevue
Mathes, Gabriel	Instructor	Lynnwood
Osgood, Bob	Instructor	Bellevue
Schaal, John E.	Dept. Head	Yakima
Stark, Marlyn A.	Instructor	Shoreline
Vanderford, Walter	Instructor	Bellingham

MAILING DIRECTORY con't.

Category III

NAME	POSITION	DISTRICT
Barney, George M.	Instructor	Olympia
Carriere, M. S.	Instructor	Auburn
Christensen, Vern	Instructor	Wenatchee
Coleman, Murry	Instructor	Olympia
Davis, Charles E.	Dept. Head	Longview
Ekar, J. A.	Instructor	Aberdeen
Emery, Karl	Instructor	Spokane
French, Claude	Instructor	Kent
Friberg, Gordon	Instructor	Spokane
Gallacher, Wm. A.	Instructor	Port Orchard
Kroch, John	Instructor	Kirkland
Langhorne, Robert S.	Instructor	Auburn
Larson, Adolph	Instructor	Olympia
Leenhouts, Dean	Instructor	Wenatchee
Nelson, Carl	Instructor	Port Angeles
Peterson, Carl	Instructor	Bremerton
Pieratt, James	Instructor	Port Orchard
Radabaugh, George	Instructor	Tacoma
Radelmiller, Myron H.	Instructor	Longview
Robb, Clyde	Instructor	Shelton
Studebaker, Robert	Instructor	Tacoma
Thomsen, Einer E.	Instructor	Tacoma
Ulery, Martin N.	Instructor	Tacoma
Welsch, Calvin R.	Dept. Head	Richland
White, Alan D.	Instructor	Kent
Widmer, Elwood	Instructor	Spokane
Zigler, Merl	Instructor	Kirkland

MAILING DIRECTORY con't.

Category IV

NAME	POSITION	DISTRICT
Barnhill, Merle	Instructor	Ellensburg
Bettine, Ed.	Instructor	Lacy
Bidstrup, Henry	Instructor	Pasco
Boschker, Wilbur	Instructor	Walla Walla
Cable, Henry	Instructor	Wapato
Caines, Gerrie	Dept. Head	Battle Ground
Campbell, Charles	Instructor	Kennewick
Dickinson, Dick	Instructor	Ellensburg
Entrikin, Eugene	Instructor	Burlington
Erickson, Ken.	Instructor	Lynden
Hansen, Walter	Instructor	Moses Lake
Helling, Andrew	Instructor	Puyallup
Hubbell, O. H.	Instructor	Federal Way
Irwin, Leland	Instructor	Ritzville
King, Quentin J.	Dept. Head	West Valley
Lindemann, E. A.	Instructor	Walla Walla
Mattila, R.	Instructor	Pullman
Porter, C. Clinton	Instructor	Chimacum
Russell, Dell	Instructor	Centralia
Schmelzer, Ken.	Dept. Head	Issaquah
Schultz, James	Instructor	Sedro-Wooley
Smith, Jack	Instructor	Sumner
West, Lyle	Instructor	E. Wenatchee
Verbon, Byron	Instructor	Vancouver

MAILING DIRECTORY con't.

Category V

NAME	POSITION	DISTRICT
Anderson, Andrew L.	Instructor	Selah
Baldwin, Richard B.	Instructor	Anacortes
Bauman, Gordon Jr.	Instructor	Cle Elum
Brandner, William J.	Instructor	White Swan
Cosgrove, Don	Instructor	Grand Coulee
Floyd, Jack W.	Instructor	Langley
Fulks, Richard L.	Instructor	Monroe
Greathouse, Glenn	Instructor	Sequim
Hughes, Homer	Instructor	Deming
Lindahl, Robert	Instructor	Othello
Marley, Don C.	Instructor	Mossyrock
Mick, Walter L.	Instructor	West Valley
Padgett, D. Wayne	Instructor	Benton City
Parker, H. B.	Instructor	Mt. Vernon
Rejniak, E. J.	Instructor	Waterville
Schmidt, Wayne	Instructor	Omak
Schryner, Duane B.	Instructor	Montesano
Suhr, Adolph	Instructor	Republic
Thomas, Ralph	Instructor	Cowiche
Richards, Bill	Instructor	Chelan
Strayer, David	Instructor	Metaline Falls