THE STATUS OF INDUSTRIAL ARTS TEACHERS IN THE STATE OF ALASKA

by

Guy Jean Bonnand

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Guy Jean Bonnand

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August 13, 1987
Date

Doug Poletti
Chairperson, Graduate Committee

Approved for the Major Department

August 13, 1987
Date

Mat L. Anderson
Head, Major Department

Approved for the College of Graduate Studies

9-4-87
Date

M P Nalon
Graduate Dean

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ABSTRACT

The major objective of this study was to inquire into the existing status of industrial arts teachers in the public schools of Alaska. The study included only those teachers identified by the 1986 Alaska Education Directory as teaching industrial arts. An effort was made to survey all identified industrial arts teachers in the state of Alaska. The data presented were supplied by 86 out of a possible 115 industrial arts teachers who responded to a written survey instrument.

The purpose of the study was to assess the current status of industrial arts teachers with regard to education, teaching experience, class enrollments, types of classes offered, and salary in three geographic areas (bush, rural and urban) within the state of Alaska.

Based on the results of the survey, it was concluded that industrial arts programs in Alaska's public schools are traditional in nature. Another conclusion was that urban teachers are older and have more education, experience, and higher salaries than their counterparts in rural and bush areas. It was also shown that a strong tendency for teachers to relocate from the northwest and southwest parts of the country exists. In general, industrial arts teachers in Alaska show a high degree of satisfaction with teaching and a willingness to continue teaching in the state.

CHAPTER 1

THE PROBLEM AND ITS SETTING

Introduction

Because Alaska is a new and a very large state, there have been considerable growing pains. One area in which this problem has surfaced is in education. Senator Mike Gravel of Alaska stated,

> It is vitally important that Alaska spend a significant amount of the oil revenues on its most valuable resource--people. Native children have suffered serious consequences because of the inadequate educational programs in the villages. From the proceeds of our natural wealth, we are obligated to address the problem of providing quality education for all Alaskans regardless of where they live (Moorefield, 1977).

There is no question that a great deal of money is available in Alaska for education; oil revenues in the general fund reached the figure of one billion dollars a year in 1977. But how are the monies being used? Are programs being introduced that are meeting the needs of Alaskans?

For the most part, the decision making authority of how these oil revenues will be spent will be determined by regional and village school boards. In 1976, the State of Alaska abolished its state school system, the Alaska Unorganized School District, and adopted a system with 21 regional school districts called Regional Educational

Attendance Areas (REAA's). Each new REAA is controlled by officials who are elected from every community in the district. Each district is then funded from the State of Alaska oil revenues according to its size.

It is the members of the district's school board who are responsible for hiring a superintendent, approving school policy and negotiating teacher salaries. Although the State Department of Education is providing technical assistance to the new regional school boards, the fact remains that people who have traditionally had decisions made for them by others are now being asked to assume fiscal, staffing and other school responsibilities that will critically affect the future of their children.

Need for the Study

Because of the rapid growth of Alaska over the past decade due to that state's large oil revenues, many Alaskan institutions found that they have had much more money to deal with. In the case of the Alaska educational system, this was not an altogether negative situation because of Alaska's size and diversified cultures and population. Because of this diversity, there was a need to experiment with different ideas in order to find what would work and where it would work.

The lure of higher salaries as well as the fact that there are no undergraduate teacher training programs in

industrial arts in the state of Alaska ensured that a large percent of industrial arts teachers would come from outside of the state. In many cases, what these teachers found in Alaska was not entirely expected. Newly formed districts had large amounts of revenues but often had little or no teacher housing, nonexistent facilities, or facilities just in the planning or building stages. Administrators as well as teaching staffs were given almost carte blanche in ordering new equipment and trying new approaches for their unique situations. For the most part, the newly formed school boards had little experience in dealing with educational problems or philosophies, let alone the vast amounts of new money.

To add to the problem, these new educational staffs found themselves in cultures that, in many cases, were quite different from those with which they were familiar. Bush and rural areas were not unique in this respect because, as more money was pumped into the Alaskan economy, members of the Native population of Alaska were able to relocate into urban areas. This presented a new challenge to those districts in meeting the needs of a more diversified population.

All of these problems helped lead to a higher turnover rate in the educational community at a time when a strong and stable force was needed. Money was spent and programs

started only to have new people come in and start the process all over again.

The boom economy for Alaska is, for the time being, over. Alaska is now facing severe monetary problems, as are most of the energy producing states. The fact that the state is entering a time of transition puts more pressure on the local and state school boards to find a new solution for these problems, but without the comfort of the dollar buffer that was once enjoyed.

In reviewing the literature, an absence of any status report dealing with industrial arts teachers in Alaska was found. The fact that this void of knowledge regarding the education, experience, class enrollments and salaries for the different geographic locations in Alaska exists would indicate that the information needed by organizations making decisions is lacking. This comes at a time when funding for all programs is being cut back and industrial education is in an evolutionary state. It is therefore the intent of this study to gather some of the information that could be used for making needed decisions. According to Karen Ryals (1987), Acting Administrator of the Office of Adult and Vocational Education in the Alaska State Department of Education, vocational education certification and endorsement status is now being reviewed and she has requested a copy of this study to aid in that process (see Appendix A).

Purpose of the Study

The purpose of the study was to assess the current status of industrial arts teachers with regard to education, teaching experience, class enrollments, types of classes offered and salary in three geographic areas (bush, rural and urban) within the state of Alaska.

Objectives

In order to achieve the purpose of the study, the following specific objectives were developed as guidelines for conducting the study:

(1) To determine the status of industrial arts teachers in Alaska with respect to teaching experience and related work experience.

(2) To compare the relative enrollments of industrial arts programs in three geographic locations.

(3) To determine the status of industrial arts teachers in Alaska with respect to origin, college attended and degrees received.

(4) To compare the status of industrial arts teachers in Alaska with respect to salary in three geographic locations.

(5) To determine and to compare industrial arts teacher job satisfaction in three geographic locations.

Assumptions

The following assumptions were made:

(1) That there was and will continue to be a difference in teacher salaries among the three geographic areas of Alaska.

(2) That there was and will continue to be a lack of complete understanding of educational philosophy by many members of the REAA school boards.

(3) That there were and will continue to be many industrial arts teaching positions in Alaska filled by industrial arts teachers relocating from the northwest part of the United States.

Limitations

The following limitations were used in conducting this survey:

(1) Only those teachers identified as industrial arts teachers in the 1986 Alaska Education Directory will be surveyed.

(2) All industrial arts teachers who are currently teaching in the state of Alaska may not be listed in the Alaska Education Directory.

(3) It is possible that some teachers of industrial arts who are not certified to teach industrial arts may be identified.

(4) No vocational educational teachers identified as such in the Alaska Education Directory will be surveyed.

Definition of Terms

The following terms are defined in order to minimize misunderstandings:

(1) Bush -- refers to any community with a population of less than 1000.

(2) Enrollment -- denotes number of students in industrial arts classes a teacher has in his/her classes.

(3) Industrial arts teacher -- any teacher who is identified in the Alaska Education Directory as teaching industrial arts.

(4) Rural -- refers to any community with a population of between 1000 and 5000.

(5) Salary -- the amount of contract money a teacher receives during a 188-day school year.

(6) Urban -- refers to any community with a population greater than 5000.

(7) Years of experience -- refers to the total number of years a teacher has taught industrial arts.

(8) Years of work experience -- refers to the amount of an industrial arts teacher's related work experience.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

For this review of literature, two areas of concern were researched. The first area dealt with the historical as well as the current trends in education within the state of Alaska. The second area involved studies of industrial arts programs that have been undertaken in other states. By reviewing the history of Alaskan education and by looking at studies of other states' industrial arts programs, the focus of this study was refined and clarified.

Review of the History of Education in Alaska

Formal education in Alaska is now going into its third century. The first 100 years of education in Alaska involved the Russian Orthodox Church and the Russian-American Company. The second 100 years involved the Presbyterian Church and the United States Government, with transfers of power in the third century to the territorial, state and community levels, respectively.

Education in Russian Alaska

The Russian period in Alaska (1741 to 1867) can be divided into three stages of about 40 years each: the early period from 1745 to 1785, the early missionary period from 1785 to 1825, and the Veniaminov era from 1825 to 1865 (Oleksa and Dauenhauer, 1983).

The Russian Orthodox mission to Alaska established bilingualism as its basis, with education in Russian and the native language of the area. Formal education in Alaska began with a small school operating from 1784 to 1786 at Three Saints Bay on Kodiak Island. The records show that it was bilingual and that the teachers made an effort to write Alutiiq, the native language of Kodiak Island, using the Russian alphabet. In 1794, the first clergy arrived on Kodiak, including the monk Herman. It is generally assumed that Herman started schooling of some kind in the 1790's.

The greatest figure in Russian-American education in Alaska in the nineteenth century was Bishop Innocent (Veniaminov) (Oleksa and Dauenhauer, 1983). He arrived in Unalaska in 1824, built the Cathedral of the Holy Ascension, designed an alphabet for Aleut and, with the help of local Aleut leaders, started translation of documents into the Aleut language. In 1834, Veniaminov moved to Sitka where he encouraged writing in Tlingit and

produced instructional materials in both Tlingit and Russian.

In 1845, the Sitka Seminary School had a curriculum which included navigation, Latin, trigonometry, and six years of an Alaska native language. Some of the other educational goals for Russian-American education included producing seamen, military personnel, agriculturists, artisans, shipbuilders, craftsmen, accountants and graduates with skills in medicine and surgery (Oleksa and Dauenhauer, 1983).

Overall, the Russian education system in Alaska had a strong vocational basis. Official Russian influence in Alaska came to an end in 1867 when Alaska was sold to the United States.

Sheldon Jackson

In 1877, the Presbyterian missionary Sheldon Jackson arrived in Sitka in response to appeals for help by both military personnel and native people in the area. When Jackson started his work for education in Alaska, there were about 7000 children of school age who had previously been in the Russian school system. Jackson presented the need for American schools in Alaska to the U.S. Congress and received in 1880 the promise of schools, but no money was allotted until later.

It was in 1884, when the Harrison Act made provision for the education of Alaskan children without regard to race, that Jackson was appointed general agent for education. Jackson was paid $1,200 per year out of the $25,000 appropriated for education in the state.

On July 4, 1884, an additional $15,000 was appropriated for the support of education of Indian children of both sexes at industrial schools in Alaska. The aims and objectives established by Jackson were made clear in his first report to Washington. In that report he stated:

> The work of the Alaska school system is not only to teach reading, writing and arithmetic, but also how to live better and how to utilize the resources of the country in order to make more money (Bonner, 1983).

Jackson incorporated these ideas into the schools as rapidly as possible. He had by this time legislated the teaching of cooking and sewing for girls and instruction in industrial work for boys. According to Jackson, "the purpose of the school is to develop an intelligent and useful citizen" (Bonner, 1983).

1900 to the Present

The rural school system began with the federal Nelson Act of 1905, which provided for new schools in unincorporated areas for "white children and children of mixed blood who lead a civilized life" (Morehouse and Fischer, 1971).

In 1917, the territorial school system was established under the jurisdiction of the Governor of Alaska.

In 1935, the territorial legislative body passed the Uniform School Act, which provided 75 percent of the cost of maintenance of schools in incorporated towns be paid from the territorial treasury with the balance being assumed by those towns. The territorial legislature passed a new law in 1939 making it compulsory for incorporated towns to pay a yearly salary to their teachers of $2,100. This placed a heavy burden on incorporated towns and many of the teachers were asked to include janitorial work in their duties. In spite of the remote location, difficult travel and limited housing, there were few problems in recruiting teachers, mainly from the northwest area of the country, who would stay in the territory for two years (Scott, 1983).

It was during this time that the Bureau of Indian Affairs (BIA) established schools in Alaska for those villages which were primarily Native. The transfer of schools to the BIA allowed all Native American education programs to be channeled through a single agency. New courses of study were started and teacher qualifications as well as their salaries were upgraded (Diefe, 1973).

Statehood for Alaska came in 1959 and had a major influence on local school districts. The state constitution required the legislature to establish and maintain a

system of public schools open to all children of the state. Although the state constitution required this, difficulties arose in developing a satisfactory plan for bringing the new state schools and established BIA school together (Diefe, 1973).

In 1965, the Alaska State Department of Education was reorganized into the Alaska State Operated School System (ASOSS or SOS). This change was made in order to help in the joining of the BIA and the state schools.

While the state was working to improve rural education at this time, it was the Molly Hootch decree (Scott, 1983) that forced a major transformation. This lawsuit, filed in 1972 and settled out of court in 1976, mandated the construction of high schools in villages with eight or more high school age children.

Due to pressure for more local control of schools, the legislature abolished the SOS in 1975 and set up 21 Rural Education Attendance Areas (REAA's). An interim system called the Unorganized School Districts of Alaska was put in place for a short time until the REAA's were installed.

At present, all school districts under the jurisdiction of the State of Alaska are locally controlled. All districts, including those of REAA status and the city and borough schools, have locally elected school boards which hire a superintendent to administer their school systems.

Review of Related Research and Literature in Industrial Arts

As has been shown in the review of the educational history of Alaska, industrial education as well as education as a whole has been steadily evolving from meeting needs established by Russian and U.S. officials to the present goal of meeting personal needs of students.

In light of the changing nature of education and in order to help in the gathering of information on the present status of industrial education in Alaska, a review of the literature from other states was important in order to set the parameters of the study. As of this time, no study has been done dealing with this subject in Alaska. The review of related literature helped in promoting an understanding of the kind of information that needed to be gathered in the course of the study. Studies from other states which dealt with academic training and subjects taught were most relevant to this study.

Reed (1948) gathered data and evaluated industrial arts programs in the state of Illinois. Reed studied the methods and devices used and the facilities for effective shop and drawing instruction in 50 schools in Illinois.

Ephraim (1969) did a study to identify the status of industrial arts teachers and programs in the secondary schools of Tennessee and to determine programs that would be desirable for industrial arts curriculum in that state.

Ephraim concluded that a large portion of Tennessee did not have industrial arts programs, that there was a shortage of teachers, and that existing programs were poorly funded.

His recommendations were that the State needed to increase funding in order to raise standards for industrial arts programs and to increase the number of programs. In addition, the education program at the East Tennessee State University needed to be changed to overcome inadequate numbers of industrial arts teachers being graduated from that program.

A 1971 study by Stuteville involved determining the educational background and the subjects taught by industrial arts teachers in Oklahoma. Stuteville conducted his study in three areas: (1) to determine if industrial arts teachers had received at least six semester hours in each subject area in which they instructed, (2) to determine the variation in industrial arts teachers' preparation in the state of Oklahoma, and (3) to determine the status of industrial arts instruction in the Oklahoma public secondary schools.

Stuteville concluded that most industrial arts teachers had their major concentrations of study in woodworking and drafting, and that woodworking was the specialty of most. Stuteville also found that the majority of the students in industrial arts in grades 7 through 12 were enrolled in woodworking programs and that General Shop

usually consisted of woodworking, drafting, metalworking and crafts.

The purpose of Bird's (1973) study was to determine the status of industrial arts in the state of Idaho. Bird wanted to find out the nature of industrial arts in public secondary schools and what courses were offered. He also sought to determine the adequacy of industrial arts facilities and how the size and type of facility affected industrial arts programs. Bird also investigated the efforts the state was making in upgrading programs and what services the state supervisor provided.

Bird concluded that the majority of industrial arts teachers had state certification, that the average age of the teachers was 35, and that the average teaching experience was 6.9 years. Approximately 93 percent of industrial arts teachers reported having some kind of industrial experience and 51 percent said they had second jobs. The majority of the teachers said that their greatest competencies were in woods, drafting, metals, welding, and crafts. There were relatively few teachers with competencies in power mechanics, industrial plastics, electricity, electronics, graphic arts, or photography. Many of the industrial arts facilities were reported as either inadequate or non-existent. Poor funding was listed as the major cause of ineffective industrial arts programs in Idaho.

Harvey (1979) designed a study to develop a profile of vocational and industrial arts teachers in Nebraska. The profile used was to compare programs, teacher assessment, evaluation and planning perspectives for educational administrators. The study was to provide information in the following areas: socioeconomic data, age, sex, residence, salary, education, teaching experience, and teacher morale. The study then went on to compare Nebraska and Texas using three null hypotheses. The hypotheses were: (1) that there was no significant difference between Nebraska and Texas secondary trade and industry teachers; (2) that there was no significant difference between Nebraska post-secondary and Texas secondary trade and industry teachers; and (3) that there was no significant difference between Nebraska secondary and post-secondary trade and industry teachers. The study then provided strong documentation for the rejection of each of the null hypotheses.

Davis (1983) gathered data concerning the main reasons for termination or resignation of trade and industry and industrial arts teachers. Davis' main purpose was to find some way to increase the retention of teachers. He found five important reasons for termination of contracts: (1) low salary, (2) better job opportunities offered elsewhere, (3) the programs were used as dumping grounds

for students, (4) no future for the teacher, and (5) poor communication within the school system.

Summary

This chapter reviewed a selection of writings in the fields of industrial arts and the history of education in Alaska. The review provided an understanding of the various types of research that have been done in industrial arts. Also, through this study, a clearer picture of the development of education in Alaska was obtained. Additionally, the review provided a look at the current structure of Alaskan education.

From the review, it was seen that many of the problems that existed at the beginning of formal education in Alaska are still in existence; problems that include bilingualism, cultural differences, geographic distances and isolation, and educational leadership. It was also clear that industrial education has always been an integral part of the educational process. Goals for industrial education were a part of Russian-American education, stressed by Sheldon Jackson and, in more recent times, developed in response to federal funding for vocational and industrial programs.

In the review of related studies, those considered to be the most relevant to this study were the ones pertaining to teachers' academic training and those that dealt with

the subject areas being taught in other states. Most of these studies indicated a need for further research in industrial arts education at the state level.

CHAPTER 3

METHODS AND PROCEDURES

Introduction

This study was conducted in order to study the educational backgrounds, subject areas, salaries, and teaching experience of industrial arts teachers in the state of Alaska. The purpose of this chapter is to describe the subjects who participated in the study, to describe the instrument used for the study, to explain the methods used in securing the data, and to explain the procedures used for analysis of the data.

Description of the Sample

The teachers involved in the study were those who were identified as industrial arts teachers in the 1986 Alaska Education Directory. This directory was prepared by the Alaska Department of Education and lists all teachers whose names were submitted to the State by their employing districts; it includes both industrial arts and vocational teachers. In some cases, the distinction was not clear as to whether a teacher was an industrial arts teacher, a vocational teacher, or both. Because of this, such teachers were not included in the study. From this

directory, 115 teachers were identified as being appropriate subjects for this study. Since neither the Alaska State Department of Education nor the Department of Vocational Education had a complete or up-to-date list of teachers, the Alaska Education Directory was considered to be the most reliable source available. Enrollment figures were submitted by school districts at the end of the 1984-85 school year. Private schools listed in the Alaska Education Directory were taken from Form 0519014, which the schools completed voluntarily and submitted to the Department of Education in the fall of 1985. Because of budget reductions in the State of Alaska for the 1986-87 school year, the fate of the 1987 directory is in doubt and it has not yet been published.

The Instrument

The instrument used for the collection of data was a questionnaire (Appendix B). A review of questionnaires in the Department of Agricultural and Industrial Education at Montana State University resulted in the decision to use a check-off list type of questionnaire. The use of the check-off list was decided upon because of the ease and reliability in interpreting and tabulating these types of data. Additional features of the check-off list include the ease with which it can be answered, the small amount of time it requires for completion, and its objectivity.

Determination of questionnaire content was guided by the statement of the problem. Further guidance was provided through conforming to some established guidelines. These guidelines included sending each survey with an enclosed introduction (Appendix C) explaining the purpose for conducting the study. An offer was made in this introductory letter to send a summary of the results to the respondents if requested. Each question was carefully phrased so the language left little room for misinterpretation. The questions were arranged in a logical order to help the respondents complete the questionnaire quickly and accurately. Clear instructions regarding the manner in which the respondents were to answer the questions further enhanced the respondents' ability to complete the survey form. All questions were written in a closed answer format to make the questionnaire time-effective to fill out, so all answers could be easily tabulated, and so the questions would be directed to fact and not opinion. Finally, courtesy was used in eliciting responses throughout the survey.

The questionnaire encompasses the individual's educational background and the subject areas being taught. The items included in the questionnaire resulted from an analysis of data needed. From this, an outline was constructed which identified areas of the problem. Six main areas were used in developing the questionnaire.

The first area dealt with the qualifications of the teachers. Qualifications included the type of certification held as well as the endorsement area(s). In addition, this area included information on the highest degree earned, the location of the university or college attended, the major field of study and whether teachers were currently working toward a degree.

The second area was included to determine a profile of the industrial arts teachers in Alaska. Information for this profile included the teacher's age, sex and ethnicity.

The third area had to do with teaching and related work experience. Teaching experience was broken down into two parts. The first dealt with the total years of teaching experience, while the second dealt with only the years of experience gained in the state of Alaska. For work experience, teachers were asked to give the total years of such experience which were specifically related to the subjects they were presently teaching.

The fourth area dealt with the instructional program of the population. Through a series of questions, the teachers were asked to indicate what grade levels they served. They were also asked the types of courses offered in industrial arts as well as the number of students served. Finally, respondents were asked the percentage of the teaching day devoted to industrial arts.

The fifth area of the survey dealt with the salaries of Alaska industrial arts teachers. The salary area was broken down into the following three parts: (1) credit for occupational experience, (2) length of teaching contract, and (3) annual (188-day) teaching salary. The survey asked the teachers for their gross salary before taxes and did not include extra activities or extended contract time.

The sixth and last area pertained to school location within the state. Information in this area included the type of location in which the instructors were presently teaching (either bush, rural, or urban settings) and their previous teaching locations in Alaska. A third group of questions asked teachers whether they would continue to teach in Alaska in the future and, if so, what type of location (bush, rural, or urban) they would prefer.

Before constructing the instrument, a review of the survey questionnaires used in other studies of similar nature was made. The survey instrument was a result of extensive study and revision, including an evaluation by the Department of Agricultural and Industrial Education at Montana State University. A pilot study of 10 percent of the target population was conducted in April of 1986 to ascertain the effectiveness of the questionnaire (Appendix D) in securing the requested data. The population for the pilot study was randomly selected by placing the names for the entire population into a hat and drawing random names.

After each selection, the name was replaced in the hat. Teachers selected for the pilot study were not included in the final survey. The pilot study had a return of seven (70%) after four weeks and no follow-up was sent. After the pilot study was completed, the questionnaire was evaluated by two industrial arts professors from Montana State University and one professor from the Department of Education at the University of Montana. The evaluation resulted in certain revisions being made to improve clarity in the final survey instrument (see Appendices B and D).

Procedures for Collecting Data

On December 8, 1986, the first mailing of the questionnaire was completed. It was mailed to 105 industrial arts teachers in the state of Alaska who had been identified as being teachers in secondary schools but who had not participated in the pilot study. Each envelope contained a personally addressed cover letter (Appendix C) and an addressed and stamped return survey. The questionnaires were mailed so they would arrive at their destination before the Christmas break.

At the conclusion of a six-week period (January 19, 1987), a second mailing with a new cover letter was sent to those teachers who had not responded (Appendix E). Returns were accepted for an additional three weeks (until February

12, 1987). At this point, 81.90 percent of the surveys had been returned and the analysis of the data commenced.

Returned questionnaires were carefully checked for completeness and usefulness, and names were checked against the mailing list for correctness of name and address.

A coding system was used on all of the surveys in order to determine which surveys would need to be followed up. This coding system took the form of fine dots placed on the bottom edge of the survey form with a fine point marker. Starting from the right-hand side, or the side with the stamp, the first group of dots indicated one of six geographic locations (southeast, southcentral, southwest, interior, northwest, and arctic) within Alaska. The second set of dots indicated the first digit of the teacher code, while the third set of dots was the second digit of the teacher code. An example of this coding would be as follows: The first set included two dots, indicating that the geographic area was southcentral. The second set included no dots and the third set had eight. This part of the code identified the individual teacher. Putting the two parts of the code together, each teacher could be identified by geographic location as well as by name and address from the master list of industrial arts teachers compiled from the 1986 Alaska Education Directory.

Statistical Procedures

The statistical treatment used in this study was of a descriptive nature, with results being presented in a tabular form. Statistical measures such as percentages, the mean, the mode, and the median were used to describe the data, with percentages being the most widely used descriptive measure.

The tables used in the presentation of the data (Chapter 4) are for the most part divided into four columns. Three of the four columns represent the individual geographic areas (urban, rural and bush) in which industrial arts teachers were divided for this study. The fourth column deals with the total population of industrial arts teachers in the state of Alaska.

Each of the four columns are then broken down by number (N) and by percent (%) of the population. This allows the columns to be compared to one another as well as to the population as a whole.

Summary

After the teachers were selected as participants in the study, the survey instrument was sent to each teacher who was teaching industrial arts in a secondary school in Alaska. The questionnaire was selected as the instrument to use because of the vastness of the state of Alaska,

reasons of economics, the usefulness and objectivity of this means of gathering data.

CHAPTER 4

PRESENTATION OF THE DATA

Introduction

The purpose of this chapter is to present the data that have been collected from the industrial arts teachers of Alaska. The data in this chapter will deal with the personal as well as professional information regarding teachers in Alaska.

An analysis of the data was made to determine the status of industrial arts and of the industrial arts teachers in Alaska. Although no statistical tests were used, descriptive statistical methods have been used extensively in the presentation of the data.

A questionnaire was the instrument used to gather the data. No stratified sampling techniques were used since every teacher of industrial arts in Alaska was included in the study. Where possible, the data have been grouped into related categories such as general information about teachers, teachers' educational background, and subject areas taught by industrial arts teachers.

Number of Mailed and Returned Forms

Table 1 illustrates the number of mailed and the number of returned questionnaires. Of the 105 questionnaires that were mailed, two were returned as undeliverable because those teachers were no longer in the positions listed in the Alaska Education Directory and those positions were no longer being funded.

Table 1. Questionnaires mailed to and returned by industrial arts teachers in Alaska.

Mailing	No. Mailed	No. Returned by Post Office	No. Returned by Teachers	Percent Returned
First	105	2	73	69.52
Second	30	0	13	12.38
Total	105	2	86	81.90

Eighty-six (81.90%) of the total number of questionnaires sent were returned. Several of the returned instruments included questionable answers and so the answers were not used and are identified as unusable in the appropriate tables.

Age Range of Alaska Industrial Arts Teachers

Tables 2 and 3 show the age range of industrial arts teachers in Alaska by geographic location. The age range

for all teachers in all areas was from 24 to 59 years, with the mean being 41 years, as presented in Table 3.

Table 2. Age range of industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Age	N	%	N	%	N	%	N	%
20-24	0	0.00	0	0.00	1	4.76	1	1.16
25-29	1	2.44	4	16.67	3	14.29	8	9.30
30-34	4	9.76	3	12.50	9	42.85	16	18.60
35-39	4	9.76	6	25.00	1	4.76	11	12.79
40-44	11	26.83	4	16.67	1	4.76	16	18.60
45-49	12	29.27	4	16.67	3	14.29	19	22.09
50-54	6	14.63	2	8.33	2	9.52	10	11.63
55-59	3	7.32	1	4.17	1	4.76	5	5.81
Total	41	100.00	24	100.00	21	100.00	86	100.00

The data presented in Table 2 show the age range of Alaska industrial arts teachers in both number and percent. It is interesting to note that 32 of the 41 (78.05%) urban teachers surveyed were above 39 years of age. Conversely, 13 of the 21 (66.66%) bush teachers surveyed were below 35 years of age. Rural teachers were well distributed throughout the age groups, with a high point existing near the middle of the ranges (the 35 to 39 years of age group)

and few teachers represented in either the upper or the lower categories.

Table 3. Mean and mode age of industrial arts teachers in Alaska.

Location	Mean Age	Mode Area
Urban	44.15	45-49
Rural	39.30	35-39
Bush	36.80	30-34
Total	41.01	45-49

When the teachers are categorized by geographic areas, a comparison can be made. The mean age of the urban teachers is 44.15, with a mode of 45 to 49; the mean age of the rural group is 39.30, with a mode of 35 to 39; and the bush group has a mean age of 36.80 and a mode of 30 to 34. This information seems to indicate a correlation between the age of a teacher and the population and location of the teaching site. On the average, urban teachers were older than their counterparts in rural and bush areas. Bush area teachers were the youngest of the three groups surveyed.

Sex and Ethnicity of Alaska Industrial Arts Teachers

Data in Tables 4 and 5 show the sex and ethnicity of industrial arts teachers in Alaska. These two tables are presented together because of the nature of the reported

data. In both cases, all geographic areas reported the same information -- that industrial arts teachers in Alaska for the most part are white males.

Table 4. Sex of industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Sex	N	%	N	%	N	%	N	%
Male	40	97.56	23	97.56	20	95.24	83	96.51
Female	0	0.00	1	4.17	1	4.76	2	2.33
Unusable	1	2.44	0	0.00	0	0.00	1	1.16
Total	41	100.00	24	100.00	21	100.00	86	100.00

Table 5. Ethnicity of industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Ethnicity	N	%	N	%	N	%	N	%
White	40	97.46	23	95.83	20	95.24	83	96.51
Am. Indian	1	2.44	0	0.00	1	4.76	2	2.33
Black	0	0.00	1	4.17	0	0.00	1	1.16
Total	41	100.00	24	100.00	21	100.00	86	100.00

Highest Degree Earned by Alaska Industrial Arts Teachers

The data arranged in Table 6 illustrate the highest degree earned by Alaska industrial arts teachers. Only one (1.16%) of the teachers surveyed currently holds an Associate degree, while 45 (52.33%) have their Bachelors degree, and 34 (39.53%) have a Masters degree. Only one (1.16%) has a Doctorate degree. Two (2.33%) of the teachers surveyed hold five-year teaching degrees.

Table 6. Highest degree earned by industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Degree	N	%	N	%	N	%	N	%
Associate	0	0.00	1	4.17	0	0.00	1	1.16
Bachelors	18	43.90	11	45.83	16	76.19	45	52.33
Masters	21	51.22	8	33.33	5	23.81	34	39.53
Doctorate	1	2.44	0	0.00	0	0.00	1	1.16
Other	1	2.44	1	4.17	0	0.00	2	2.33
Unusable	0	0.00	3	12.50	0	0.00	3	3.49
Total	41	100.00	24	100.00	21	100.00	86	100.00

As can be seen from Table 6, urban teachers have the greatest amount of formal education, with 21 (51.22%) having a Masters degree. Bush teachers have the least

amount of education, with only five (23.81%) having a Masters degree. Several questions could be asked relative to this information. One question is whether the age of each group has anything to do with the education level attained. Another question is whether the fact that both universities and colleges are usually located in more populated areas has any effect on the educational opportunities of the teachers. As these questions were not addressed in the survey, however, no conclusions could be made.

Geographic Location From Which Highest Degree Was Earned

Data presented in Table 7 show the geographic location from which industrial arts teachers in Alaska received their highest degrees. Both the northwest and the southwest regions had an equal number of graduates. Each region had 23 (26.74%) of the graduates; combined, these two areas included 53.48 percent of the total.

The information concerning geographic location from which the highest degree was earned (Table 7) is interesting when combined with data related to the highest degree earned (Table 6). The greatest number (seven, or 17.07%) of those who received their highest degree in Alaska are also teaching in the urban areas in which universities are located. This also reflects the fact that a greater percentage of urban teachers have Masters degrees compared

to teachers in rural and bush areas. This does not, however, take into account the age of the teachers, which is also higher in urban areas. As with Table 6, these questions were not addressed in the survey and no conclusions should be made.

Table 7. Geographic location from which highest degree was earned by industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Area	N	%	N	%	N	%	N	%
Northeast	3	7.32	4	16.67	5	23.81	12	13.95
Southeast	1	2.44	0	0.00	1	4.76	2	2.33
N. Central	6	14.63	3	12.50	4	19.05	13	15.12
S. Central	1	2.44	1	4.17	0	0.00	2	2.33
Northwest	7	17.07	11	45.83	5	23.81	23	26.74
Southwest	13	31.71	4	16.67	6	28.57	23	26.74
Alaska	7	17.07	1	4.17	0	0.00	8	9.30
Unusable	3	7.32	0	0.00	0	0.00	3	3.49
Total	41	100.00	24	100.00	21	100.00	86	100.00

Alaska Industrial Arts Teachers Presently Working Towards Degree

Data presented in Table 8 show the percent of industrial arts teachers currently working towards a degree.

Overall, 29 (33.72%) of the teachers surveyed indicated that they were working towards a degree.

The rural geographic area had the most teachers (11, or 45.83%) working towards a degree. This is followed by bush teachers, with a total of eight (38.10%). Only 10 (24.39%) urban industrial arts teachers were working towards a degree. However, the fact that urban teachers show the highest amount of education in the three areas could indicate that their educational needs have been met.

Table 8. Alaska industrial arts teachers presently working towards a degree.

Working Towards Degree	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
Yes	10	24.39	11	45.83	8	38.10	29	33.72
No	31	75.61	13	54.17	13	61.90	57	66.28
Total	41	100.00	24	100.00	21	100.00	86	100.00

A review of the data in Table 9 shows the anticipated degree towards which Alaska industrial arts teachers are working. In all geographical areas, the most respondents indicated they were working towards a Masters degree.

The data presented in Table 10 show the degree area towards which industrial arts teachers in Alaska are working. Overall, 15 (35.71%) of the teachers surveyed were working for a degree in industrial arts. This

information does not reflect those teachers who are working towards a vocational education degree.

Table 9. Anticipated degrees of industrial arts teachers in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Degree	N	%	N	%	N	%	N	%
Associate	0	0.00	0	0.00	0	0.00	0	0.00
Bachelors	0	0.00	2	18.18	0	0.00	2	6.90
Masters	10	100.00	8	72.72	8	100.00	26	89.66
Doctorate	0	0.00	1	9.09	0	0.00	1	3.45
Other	0	0.00	0	0.00	0	0.00	0	0.00
Unusable	0	0.00	0	0.00	0	0.00	0	0.00
Total	10	100.00	11	100.00	8	100.00	29	100.00

Table 10. Degree area in which Alaska industrial arts teachers are working.

	Location							
	Urban		Rural		Bush		Total	
Area	N	%	N	%	N	%	N	%
I.A.	4	40.00	11	45.83	0	0.00	15	35.71
Other	6	60.00	13	54.17	7	87.50	26	61.90
Unusable	0	0.00	0	0.00	1	12.50	1	2.38
Total	10	100.00	24	100.00	8	100.00	42	100.00

As shown by the data in Table 10, the greatest number of teachers (11, or 45.83%) working towards an industrial arts degree came from the rural areas. This was followed by four (40.00%) in the urban areas. No teachers in the bush areas indicated they were working towards any degree in the area of industrial arts.

Certificate Areas of Alaska Industrial Arts Teachers

All 86 industrial arts teachers included in this study held a valid Alaska teaching certificate. Nine types of certificates were being issued in Alaska, with the Type A being the most common for classroom teachers. Alaska allows teachers to hold more than one type of teaching certificate at any given time. For this study, only four types of certificates will be taken into account. These four types covered all of the teachers in the study. The four certificates are Type A (regular), Type B (administrative), Type D (vocational trades), and Type T (temporary) (Alaska Department of Education, n.d.). A list of all nine types of Alaska teaching certificates can be found in Appendix F of this paper.

Of the 86 industrial arts teachers surveyed for this study, 91.86% held a Type A certificate alone or in combination with an additional certificate. The Type A

(regular) certificate is valid for five years. The requirements for this certificate are as follows:

> (a) Completed an approved teacher education program, (b) has a Bachelors degree, (c) has a recommendation (endorsement) from the preparing institution, and (d) has recency credits (Alaska Department of Education, n.d.).

The Type B (administrative) certificate was held by five (5.81%) of the teachers surveyed. This certificate is also valid for five years and its requirements are as follows:

> (a) Completed an approved program in school administration, (b) has a Masters degree or higher, (c) has a recommendation (endorsement) from the preparing institution, (d) has three years of satisfactory teaching experience on a regular teaching certificate, and (e) has recency credit (Alaska Department of Education, n.d.).

The Type D (vocational trades) certificate was held by eight (9.30%) of those teachers surveyed. This certificate is only valid for two years. The requirements for the Type D certificate are:

> (a) Four or more calendar years of full-time work experience in a trade or vocational pursuit, of which not more than two years may be formal training (trade school, technical institute, etc.), (b) a statement from one or more training agencies or past employers substantiating the experience, and (c) has proof of employment to instruct in trade or vocational area in an accredited school district in Alaska (Alaska Department of Education, n.d.).

The Type T (temporary) certificate was held by only one (1.16%) of the teachers surveyed. This certificate is valid for one year only and cannot be renewed. The requirements for the Type T certificate are as follows:

> (a) Meets all application requirements for certification except the six semester hours of recency credit, (b) provides evidence of satisfactory service during at least three of the five years immediately preceding application, and (c) has never possessed an Alaska teacher certificate (Alaska Department of Education, n.d.).

The data in Table 11 show the various types of teaching certificates held by the Alaska industrial arts teachers surveyed.

Table 11. Types of certificates held by industrial arts teachers in Alaska.

Type Certificate	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
A	35	85.37	27	70.83	18	85.71	70	81.40
B	0	0.00	0	0.00	1	4.76	1	1.16
D	0	0.00	3	12.50	0	0.00	3	3.49
T	0	0.00	1	4.17	0	0.00	1	1.16
A and B	2	4.88	1	4.17	0	0.00	3	3.49
A and D	3	7.32	2	8.33	0	0.00	5	5.81
A, B and D	1	2.44	0	0.00	0	0.00	1	1.16
Unusable	0	0.00	0	0.00	2	9.52	2	2.33
Total	41	100.00	24	100.00	21	100.00	86	100.00

Endorsement Areas of Alaska Industrial Arts Teachers

The Alaska Department of Education will only allow endorsements in the major area(s). Alaska teachers cannot

receive endorsements in their minor teaching areas, but the Department of Education will allow the chief school administrator to use any teacher in any area that is deemed necessary. This can, in some cases, result in a wide discrepancy between a teacher's endorsement and his/her teaching assignment. In view of this, it was necessary to determine if those teachers who are presently teaching in industrial arts programs were indeed trained in that area. As shown in Table 12, the largest percentage of industrial arts teachers are endorsed in industrial arts, alone or in combination with other endorsement areas. This group, which involved four of the endorsement areas listed in

Table 12. Area(s) of endorsement of Alaska industrial arts teachers.

	Location							
	Urban		Rural		Bush		Total	
Endorsement	N	%	N	%	N	%	N	%
I.A.	16	39.02	7	29.17	11	52.38	34	39.53
V.T.	9	21.95	7	29.17	3	14.29	19	22.09
Other	3	7.32	2	8.33	2	9.52	7	8.14
I.A. & V.T.	9	21.95	6	25.00	2	9.52	17	19.77
I.A. & other	1	2.44	1	4.17	1	4.76	3	3.49
V.T. & other	1	2.44	0	0.00	2	9.52	3	3.49
I.A., V.T., & other	2	4.88	1	4.17	0	0.00	3	3.49
Total	41	100.00	24	100.00	21	100.00	86	100.00

Table 12, included a total of 57 (66.28%) of the respondents.

It is interesting to note that those teachers who had vocational trades endorsements (either alone or in combination with other areas) represented only 23.26 percent of the total. There were also seven teachers (8.14%) with no industrial arts or vocational trades endorsement.

As it was the intent of this study to survey only industrial arts teachers, no comparison can or should be made between industrial arts and vocational trades programs in the state of Alaska.

Length of Teaching Contract

Data presented in Table 13 show the length of teaching contracts for Alaska industrial arts teachers. The normal teaching contract for the state is 188 days, but in some cases this is extended for special reasons. As can be seen in Table 13, all three geographic areas are similar in their distribution of contract length.

As shown, the largest percentage of industrial arts teachers, 69 of the 86 respondents (80.23%), had the standard 188-day or nine-month teaching contract. This is followed by the 12-month contract, which included 11 (12.79%) of the teachers. The last variation represented was the 10-month contract which included six (6.98%) of the

respondents. There were no teachers with 11-month or part-time contracts.

Table 13. Length in months of teaching contracts for Alaska industrial arts teachers.

	Location							
	Urban		Rural		Bush		Total	
Months	N	%	N	%	N	%	N	%
9	33	80.49	19	79.17	17	80.95	69	80.23
10	3	7.33	2	8.33	1	4.76	6	6.98
11	0	0.00	0	0.00	0	0.00	0	0.00
12	5	12.20	3	12.50	3	14.29	11	12.79
Part-time	0	0.00	0	0.00	0	0.00	0	0.00
Total	41	100.00	24	100.00	21	100.00	86	100.00

Occupational Experience in Determining Placement on the Salary Schedule

Data presented in Table 14 indicate the number of districts that allow occupational work experience, as well as teaching experience, in determining placement on the salary schedule. In most of the cases where occupational work experience was allowed, one year of experience was equal to one year of teaching experience, with a maximum of five years being allowed.

As can be seen from Table 14, the largest percentage of school districts allowing occupational work experience is in the urban areas. This category included 13 (31.71%) of the teachers surveyed. Only 15 (17.44%) of the teachers

indicated they received salary credit for occupational work experience. Why such a large disparity exists among the three geographic areas is not known. Even when the results of Table 14 are compared to Table 15, the reason for such a disparity is still not clear.

Table 14. Alaska school districts that allow work experience in determining placement on salary schedule.

Work Experience	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
Yes	13	31.71	0	0.00	2	9.52	15	17.44
No	27	65.85	24	100.00	19	90.48	70	81.40
Unusable	1	2.44	0	0.00	0	0.00	1	1.16
Total	41	100.00	24	100.00	21	100.00	86	100.00

Data presented in Table 15 indicate the number of years of industrial work experience reported by the teachers surveyed. As illustrated by Table 15, only eight teachers (9.30%) indicated that they did not have any work experience which was specifically related to the subjects presently being taught. When the three geographic areas are compared to each other, no discernible differences can be observed. One possible explanation would be that there are more vocational high schools in urban areas which could affect the salary schedule. However, since this survey did

not deal with vocational trades, no data are available and no conclusion should be made.

Table 15. Number of years of industrial work experience specifically related to the subjects presently taught by Alaska industrial arts teachers.

Years of Experience	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
None	4	9.76	1	4.17	3	14.29	8	9.30
0-2	8	19.51	3	12.50	3	14.29	14	16.28
3-5	14	34.14	5	20.83	7	33.33	26	30.23
6-8	5	12.20	6	25.00	3	14.29	14	16.28
9-15	4	9.76	6	25.00	4	19.05	14	16.28
16-20	3	7.32	1	4.17	0	0.00	4	4.65
Over 20	2	4.88	2	8.33	1	4.76	5	5.81
Unusable	1	2.44	0	0.00	0	0.00	1	1.16
Total	41	100.00	24	100.00	21	100.00	86	100.00

Teaching Salary for Alaska Industrial Arts Teachers

Data presented in Table 16 show the annual 188-day teaching salary for Alaska industrial arts teachers. According to NEA Today (1987), the average teaching salary for the State of Alaska is $43,970. The average teaching salary for industrial arts teachers in Alaska was in the $40,000 to $44,999 range. By comparing these figures, it

can be noted that industrial arts teachers' salaries are at the same level as those of other teachers in Alaska.

Table 16. Annual 188-day teaching salary (before taxes) for Alaska industrial arts teachers.

	Location							
	Urban		Rural		Bush		Total	
Salary ($)	N	%	N	%	N	%	N	%
20-24,999	0	0.00	1	4.17	0	0.00	1	1.16
25-29,999	1	2.44	1	4.17	2	9.52	4	4.65
30-34,999	4	9.76	5	20.83	5	23.81	14	16.28
35-39,999	7	17.07	4	16.67	5	23.81	16	18.60
40-44,999	9	21.95	10	41.67	4	19.05	23	26.74
45,000+	20	48.78	3	12.50	5	23.81	28	32.56
Total	41	100.00	24	100.00	21	100.00	86	100.00

The data in Table 17 show that the median salary for urban areas was in the $40-44,999 range, with a mode in the $45,000+ range. The median salary for teachers in rural areas was in the $40-44,999 range, with a mode in the $40-44,999 range. The bush areas showed a median salary in the $35-39,999 range, with a mode in the ranges of $30-34,999, $35-39,999 and $45,000+. These figures would imply that the salary schedules in urban areas are higher than those in the rural or bush areas. However, this may not be the case if the data on amount of education and years of service is interjected. It was found that on the average,

urban teachers have a substantial difference in years of experience and have higher degrees of education. Both factors would place urban teachers higher on the salary schedule than their counterparts in rural and bush areas.

Table 17. Range and mode of industrial arts teachers' salaries in Alaska by location.

	Salary	
Location	Median	Mode
Urban	$40-44,999	$45,000+
Rural	$35-39,999	$40-44,999
Bush	$35-39,999	$30-34,999, $35-39,999, $45,000+
Total	$40-44,999	$45,000+

Years of Teaching Experience in Alaska

An indication of the teaching experience of Alaska industrial arts teachers is presented in Table 18. This table contains the number and percentage of teachers according to years of teaching experience in the state of Alaska only.

The largest number of teachers (19, or 22.09%) reported from 16 to 20 total teaching years in the state. Only eight (9.30%) of the teachers were in the 0 to 2 year category for years of Alaska teaching experience.

Table 18. Number of years of teaching experience in Alaska by industrial arts teachers.

Years of Teaching Experience	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
0-2	1	2.44	4	16.67	3	14.29	8	9.30
3-5	3	7.32	4	16.67	10	47.62	17	19.77
6-8	7	17.07	5	20.83	4	19.05	16	18.60
9-15	7	17.07	7	29.17	3	14.29	17	19.77
16-20	14	34.15	4	16.67	1	4.76	19	22.09
Over 20	6	14.63	0	0.00	0	0.00	6	6.98
Unusable	2	4.88	0	0.00	0	0.00	2	2.33
Total	41	100.00	24	100.00	21	100.00	86	100.00

As can be seen from the data in Table 18, the bush regions had the greatest number of teachers in the 3 to 5 year experience bracket, for a total of 10 (47.62%). The bush areas had the fewest number of teachers in the 16 to 20 year bracket, with only one teacher (4.76%) included. No bush teachers were in the over 20 year bracket.

The rural areas had their greatest number in the 9 to 15 year bracket, with seven teachers (29.17%). As with the bush areas, there were no rural teachers in the over 20 year category. Rural teachers did present a somewhat even

distribution throughout the 0 to 20 year bracket, with a high point in the 9 to 15 year bracket.

The greatest number of urban teachers was in the 16 to 20 year category; 14 teachers (34.15%) were included in this bracket. The smallest number of urban teachers was in the 0 to 2 year bracket, with only one teacher (2.44%).

Overall for the state, the greatest number of industrial arts teachers was in the 16 to 20 years of teaching bracket; a total of 19 teachers (22.09%) were in this category. The smallest number of teachers was in the over 20 year bracket, which included six teachers (6.98%).

As can be seen from the information in Table 18, urban teachers included the greatest number of teachers with experience in the state. This was followed by rural teachers, while bush teachers as a group had the fewest years of teaching experience in Alaska.

The reasons for selecting the year brackets used in the survey were as follows: The 0 to 2 year category was used to find new teachers and also because most teachers like to stay at a teaching assignment for at least two years. The 3 to 5 year category was used to indicate tenured teachers. In Alaska, a teacher's third year is tenured. After the eighth year of service in the state, a teacher is vested in the State's retirement system. At 15 years, teacher retirement benefits include medical

coverage, and after 20 years a teacher can retire with full benefits.

Total Years of Teaching Experience Both In and Out of the State of Alaska

The data presented in Table 19 represent the number and percentage of teachers according to their total years of experience both within the state of Alaska and outside of the state. The largest number of teachers reported from 9 to 15 total teaching years, with 23 teachers (26.74%) represented in this category.

Table 19. Total number of years of teaching experience of Alaska industrial arts teachers.

Total Years of Teaching Experience	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
0-2	1	2.44	2	8.33	3	14.29	6	6.98
3-5	0	0.00	3	12.50	5	23.81	8	9.30
6-8	5	12.20	2	8.33	4	19.05	11	12.79
9-15	8	19.51	10	41.67	5	23.81	23	26.74
16-20	13	31.71	3	12.50	2	9.52	18	20.93
Over 20	12	29.27	4	16.67	2	9.52	18	20.93
Unusable	2	4.88	0	0.00	0	0.00	2	2.33
Total	41	100.00	24	100.00	21	100.00	86	100.00

As can be seen from this table, the bush regions had the greatest number of teachers in the 3 to 5 and the 9 to 15 year brackets; each bracket included five (23.81%) of the bush respondents. The bush had its smallest number in the 0 to 2 year category, with three teachers (14.29%).

The rural areas had their greatest number of teachers in the 9 to 15 year bracket, with 10 teachers (41.67%). The remaining rural teachers were divided among five brackets, each of which included only a small number of teachers. Two teachers (8.33%) each were in the 0 to 2 year and the 6 to 8 year brackets, three teachers (12.50%) each in the 3 to 5 year and 16 to 20 year brackets, and four teachers (16.67%) were in the over 20 year bracket.

In the urban areas, the greatest number of teachers was in the 16 to 20 years of teaching experience category. This included 13 (31.71%) of the respondents. This was followed closely by the over 20 year bracket with 12 teachers (29.27%). If both of these brackets were to be combined, they would represent 60.98 percent of all the urban teachers and 29.06 percent of the entire industrial arts teacher population. The smallest number of urban teachers fell in the 0 to 2 year bracket, with one teacher (2.44%) included. No urban teachers were in the 3 to 5 year category.

As was the case with total teaching experience in Alaska (Table 18), urban areas also had the most teachers

with the greatest amount of total teaching experience. Rural areas followed with their greatest number of teachers being in the 9 to 15 year bracket. In bush areas, the greatest number of teachers were split between the 3 to 5 year and the 9 to 15 year category.

Location of the Last Teaching Position Outside of Alaska

Data arranged in Table 20 show the number and percent of industrial arts teachers who have taught outside of Alaska. Data in Table 21 show the geographic areas in which the teachers had their experience outside of the state.

Table 20. Number of industrial arts teachers who have taught outside of Alaska.

Taught Outside of Alaska	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
Yes	29	70.73	14	58.33	12	57.14	55	63.95
No	12	29.27	10	41.67	9	42.85	31	36.05
Total	41	100.00	24	100.00	21	100.00	86	100.00

In Table 20, the number of teachers who had taught outside of the state was 55 (63.95%). Urban teachers included the greatest number of outside teachers at 29 (70.73%). Both the rural and the bush areas were close to

each other, with 14 (58.33%) of the rural teachers and 12 (57.14%) of the bush teachers, a difference of only 1.19 percent. This finding coincides with the findings presented in Tables 18 and 19, which detail the experience levels of teachers in the different geographic locations. This information suggests that urban areas hire more experienced teachers to begin with, and that may be the reason why the experience level is higher there than in the other areas of the state.

In Table 21, the locations of the last teaching positions outside of Alaska are shown. The largest number of teachers, a total of 20 (36.36%), reported the northwest section of the United States as the location of their last teaching position out of the state. The lowest number was the southeast, with only one teacher (1.82%).

The largest number of urban teachers indicated that the southwest was the site of their last teaching position outside of Alaska. This group included 10 teachers (34.48%). This was followed by both the northwest and the midwest, each of which included eight (27.59%) urban teachers. The rural areas had a substantial lead in the northwest, with a total of eight teachers (57.14%). This was followed by the midwest with three (21.43%) of the respondents. The bush areas split their greatest number of responses between the northwest and the midwest, with four teachers (33.33%) going to each area.

Table 21. Locations of Alaska industrial arts teachers' last teaching positions outside of Alaska.

	Location							
	Urban		Rural		Bush		Total	
Area	N	%	N	%	N	%	N	%
Northwest	8	27.59	8	57.14	4	33.33	20	36.36
Southwest	10	34.48	1	7.14	2	16.67	13	23.63
Midwest	8	27.59	3	21.43	4	33.33	15	27.27
Northeast	0	0.00	0	0.00	2	16.67	2	3.64
Southeast	1	3.45	0	0.00	0	0.00	1	1.82
Other	1	3.45	1	7.14	0	0.00	2	3.64
Unusable	1	3.45	1	7.14	0	0.00	2	3.64
Total	29	100.00	14	100.00	12	100.00	55	100.00

From the information that has been presented, it is clear that most industrial arts teachers with experience enter the state from the northwest, the midwest and the southwest, respectively.

Grade Levels Taught by Alaska Industrial Arts Teachers

Table 22 supplies data about the grade levels taught by industrial arts teachers in Alaska. The greatest number of these instructors teach grades 9 through 12; this category included 45 teachers (52.33%). Only five teachers (5.81%) indicated that they taught grades 6 to 8. When

comparing information from each geographic location, we find that there are no teachers in the bush areas teaching in the 6 to 8 or the 7 to 9 grade brackets. However, bush areas had 13 respondents (61.90%) teaching in the 7 to 12 grade bracket. Percentage-wise, bush schools have more 7 through 12 grade industrial arts classes than do urban schools (14.63%) or rural schools (37.50%). Urban and rural areas make up for this by having more middle and junior high schools offering industrial arts classes.

Table 22. Grade levels taught by Alaska industrial arts teachers.

	Location							
	Urban		Rural		Bush		Total	
Grades	N	%	N	%	N	%	N	%
6-8	3	7.32	2	8.33	0	0.00	5	5.81
7-9	7	17.07	1	4.17	0	0.00	8	9.30
9-12	25	60.97	12	50.00	8	38.10	45	52.33
7-12	6	14.63	9	37.50	13	61.90	28	32.56
Total	41	100.00	24	100.00	21	100.00	86	100.00

Class Size in Alaska Industrial Arts Programs

Table 23 presents information detailing the class sizes of industrial arts programs in Alaska. The data show that the 11 to 15 student category had a slight lead over

other categories, with 21 teachers (24.42%) indicating this as average class size. Only two teachers (2.33%) indicated that they had class sizes of from 1 to 5 students. As would be expected, the larger the community, the larger the class size.

Table 23. Average number of students per class for Alaska industrial arts teachers.

No. of Students	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
1-5	0	0.00	0	0.00	2	9.52	2	2.33
6-10	0	0.00	6	25.00	13	61.90	19	22.09
11-15	6	14.63	9	37.50	6	28.57	21	24.42
16-20	8	19.51	8	33.33	0	0.00	16	18.60
21-25	18	43.90	1	4.17	0	0.00	19	22.09
Over 25	9	21.95	0	0.00	0	0.00	9	10.47
Total	41	100.00	24	100.00	21	100.00	86	100.00

In urban areas, the greatest number of teachers (18, or 43.90%) reported that their average class size was in the 21 to 25 category. Urban areas reported no class loads in either the 1 to 5 student area or the 6 to 10 student area. In the rural areas, nine teachers (37.50%) had class sizes in the 11 to 15 student category, with a strong second-place showing in the 16 to 20 student area, with eight teachers (33.33%) reporting such class loads. No

teachers in the rural areas reported class sizes in the 1 to 5 student category. The bush schools, with 13 teachers (61.90%), had their greatest number in the 6 to 10 student category. Two bush teachers (9.52%) did report having classes in the 1 to 5 student category.

Percentage of School Day Spent Teaching Industrial Arts

Table 24 presents data that show the percentage of the school day teachers are assigned to teach industrial arts. The data indicate that the greatest number of teachers fall in the 76 to 100 percent bracket. This bracket included 66 teachers (76.74%). The smallest area, in which teachers spend from 26 to 50 percent of their day teaching industrial arts, included only three (3.49%) of those teachers surveyed.

Table 24. Percentage of school day spent teaching industrial arts by industrial arts teachers in Alaska.

Percentage of School Day	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
0-25	0	0.00	2	8.33	6	28.57	8	9.30
26-50	0	0.00	0	0.00	3	14.29	3	3.49
51-75	5	12.20	2	8.33	1	4.76	8	9.30
76-100	36	87.80	19	79.17	11	52.38	66	76.74
Unusable	0	0.00	1	4.17	0	0.00	1	1.16
Total	41	100.00	24	100.00	21	100.00	86	100.00

In all geographic regions, the majority of teachers were in the 76 to 100 percent bracket as indicated by data presented in Table 24. In urban areas, this bracket included 36 (87.80%) of the teachers. In rural locations, 19 (79.17%) of the teachers were in this category, as were 11 (52.38%) of the teachers in the bush areas.

Only the rural and bush areas reported teachers in the 0 to 25 and 25 to 50 percent brackets. All urban locations reported no teachers below the 51 to 75 percent area. As would be expected, the larger the school population, the more specialized teachers become.

Curriculum of Industrial Arts Programs in Alaska

Table 25 presents data on the curriculum areas taught in industrial arts programs in Alaska by total number and by percent. The data show that the greatest number of teachers have classes in woodworking; this category included 60 (69.77%) of the respondents. All locations except the urban ones listed woodworking as their number one offering, with 20 (83.33%) of the rural teachers and 16 (76.16%) of the bush teachers placing woodworking first.

Twenty-six (63.41%) of the urban teachers listed drafting as a major curricular area; this was the largest category. This was followed by woodworking, with 24 teachers (58.54%). All locations had a strong showing in general shop, with urban areas having 12 teachers (29.27%)

indicating this subject; rural areas had six teachers (25.00%), and bush areas had seven teachers (33.33%). For the state as a whole, 29.07% of industrial arts teachers taught some classes in general shop.

Table 25. Subject areas taught for school year 1985-86 by Alaska industrial arts teachers.

	Location							
	Urban		Rural		Bush		Total	
Subjects Taught	N	%	N	%	N	%	N	%
Machine Shop	4	9.76	5	20.83	2	9.52	11	12.79
Auto Mechanics	9	21.95	9	37.50	5	23.81	23	26.74
Welding	5	12.20	12	50.00	11	52.38	28	32.56
Carpentry	2	4.88	13	54.17	12	57.14	27	31.40
Drafting	26	63.41	15	62.50	10	47.62	51	59.30
Woodworking	24	58.54	20	83.33	16	76.19	60	69.77
Small Engines	7	17.07	11	45.83	10	47.62	28	32.56
General Shop	12	29.27	6	25.00	7	33.33	25	29.07
Robotics	0	0.00	0	0.00	0	0.00	0	0.00
Crafts	1	2.44	2	8.33	0	0.00	3	3.49
Electronics	2	4.88	0	0.00	0	0.00	2	2.33
Aviation	2	4.88	0	0.00	0	0.00	2	2.33
Metal Work	4	9.76	2	8.33	0	0.00	6	6.98
Lapidary	1	2.44	0	0.00	0	0.00	1	1.16
Native Arts	0	0.00	0	0.00	1	4.76	1	1.16
Sled Building	0	0.00	0	0.00	1	4.76	1	1.16
World of Work	2	4.88	2	8.33	1	4.76	5	5.81
Transportation	2	4.88	0	0.00	0	0.00	2	2.33
Plastics	11	26.83	1	4.17	0	0.00	12	13.95
Graphic Arts	1	2.44	1	4.17	0	0.00	2	2.33
Crafts	1	2.44	2	8.33	0	0.00	3	3.48

Of all the industrial arts teachers in the state, 28 (32.56%) indicated that they taught welding, but only five (12.20%) of the teachers in the urban areas taught this subject. In contrast, 12 (50.00%) of the teachers in rural areas indicated welding as a curricular area, while in the bush, 11 (52.38%) included welding. This may reflect the high numbers of vocational high schools in the urban areas which were not identified as industrial arts, but rather as vocational education.

The same holds true for the subject of carpentry, which in urban areas was taught by only two teachers (4.88%). Rural areas had 13 (54.17%) of the respondents teaching this subject, while bush areas had 12 teachers (54.14%).

Aviation was taught only in urban schools, with two teachers (4.88%) indicating this subject was a part of their curriculum. Native arts and sled building were rarely taught, with only bush schools listing these curricular areas; in both cases, only one teacher (4.76%) taught these subjects.

Overall, the subjects offered by industrial arts programs in Alaska are traditional in nature. The majority of such programs across the state have their emphasis in the woodworking, drafting and general shop areas, with a minority offering such subjects as traditional Native arts, transportation and technology.

Industrial Arts Teachers Who Have Previously Taught in Alaska

Table 26 shows the amount and percent of teachers who have taught previously in the state. As can be seen, 20 (23.26%) of those surveyed have had teaching positions in other locations within the state. The largest group of such teachers was in the rural areas where there were eight teachers (33.33%). This was followed by the bush areas, with five teachers (23.81%). The lowest group was urban teachers, which included only seven teachers (17.07%).

Table 26. Number of industrial arts teachers who have previously taught in Alaska.

Taught Previously in Alaska	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
Yes	7	17.07	8	33.33	5	23.81	20	23.26
No	34	82.93	16	66.67	16	76.19	70	76.74
Total	41	100.00	24	100.00	21	100.00	86	100.00

Data in Table 27 show the locations of the schools in which the teachers had previously taught. The greatest number was shown to be bush schools with nine teachers (45.00%) denoting this location as the one in which they had previously taught. The smallest groups were the multi-groups which included teachers who had previously taught in

more than one location; those multi-groups were the urban and rural and the rural and bush, both of which included just one teacher (5.00%). The urban areas included six teachers (30.00%), and the rural included two (10.00%) of those teachers surveyed.

Table 27. Area in which school was located if industrial arts teacher had previously taught in Alaska.

	Location							
	Urban		Rural		Bush		Total	
Area	N	%	N	%	N	%	N	%
Urban	4	57.14	1	12.50	1	20.00	6	30.00
Rural	1	14.29	0	0.00	1	20.00	2	10.00
Bush	0	0.00	6	75.00	3	60.00	9	45.00
Urban/Rural	1	14.29	0	0.00	0	0.00	1	5.00
Rural/Bush	1	14.29	0	0.00	0	0.00	1	5.00
All	0	0.00	1	12.50	0	0.00	1	5.00
Total	7	100.00	8	100.00	5	100.00	20	100.00

In the urban areas, four teachers (57.14%) listed urban as the most frequent location of previous service. Rural teachers listed bush areas as the most frequent location of past teaching, with six teachers (75.00%) included. Bush teachers also listed bush areas most often as the site of previous service, with three teachers (60.00%) giving that response.

Overall there is a pattern of urban teachers moving from urban areas to other urban areas, while rural and bush teachers move from bush locations more often than from any other location. There is little movement from rural areas to any of the other two areas (urban and bush). Of the urban teachers, only one (14.29%) indicated moving from a rural area. Only one (20.00%) of the bush teachers specified moving from a rural area. In rural areas no teachers indicated having previously moved from a rural area.

Teachers Who Would Relocate in the State of Alaska

The data presented in Table 28 indicate by number and by percent the teachers who would relocate in the state of Alaska. As shown in Table 26, 20 (23.26%) of the teachers surveyed have relocated from one or more areas within the state. This information was gathered in response to the question of whether or not teachers would continue to find Alaska a desirable place to work.

A clear majority of the teachers responded that they would relocate within the state, with 65 (75.58%) indicating they would. Although this information cannot be used as positive proof, it does help in understanding that most industrial arts teachers are content with their educational and physical situation in the state.

Table 28. Number of industrial arts teachers who would relocate and continue teaching in Alaska.

Willing to Relocate	Location							
	Urban		Rural		Bush		Total	
	N	%	N	%	N	%	N	%
Would	25	60.98	21	87.50	19	90.48	65	75.58
Would not	13	31.71	3	12.50	2	9.52	18	20.93
Unusable	3	7.31	0	0.00	0	0.00	3	3.49
Total	41	100.00	24	100.00	21	100.00	86	100.00

In Table 29, responses are shown to questions about relocating within Alaska and to which area of the state a teacher would prefer to relocate. As can be seen, 25 teachers (38.46%) said that if they relocated they would choose a rural setting. Thirteen teachers (20.00%) said they would choose an urban setting and four respondents (6.15%) indicated a preference for a rural or an urban setting. Nine teachers (13.85%) responded with a preference of a bush relocation, while eight teachers (12.31%) said they would choose a rural or a bush position.

In the individual geographic locations, urban areas had their greatest number of teachers indicating a preference to relocate in another urban area; this included nine teachers (36.00%). This was followed by the relocation to rural areas; this category accounted for seven teachers (28.00%). Bush areas were a relocation choice of two

teachers (8.00%). Of those urban teachers who stated they would relocate to more than one area, three teachers (12.00%) indicated that they would relocate to an urban or a rural setting, but only one teacher (4.00%) indicated a preference to relocate to a bush or a rural area.

Table 29. Type of area relocating industrial arts teachers would select.

	Location							
	Urban		Rural		Bush		Total	
Area	N	%	N	%	N	%	N	%
Urban	9	36.00	3	14.29	1	5.26	13	20.00
Rural	7	28.00	12	57.14	6	31.58	25	38.46
Bush	2	8.00	0	0.00	7	36.84	9	13.85
Urban/Rural	3	12.00	0	0.00	1	5.26	4	6.15
Rural/Bush	1	4.00	5	23.81	2	10.53	8	12.31
All	2	8.00	1	4.76	0	0.00	3	4.62
Unusable	1	4.00	0	0.00	2	10.53	3	4.62
Total	25	100.00	21	100.00	19	100.00	65	100.00

In the rural areas, the greatest number of respondents (12 teachers, or 57.14%) stated that they would relocate only to another rural area. This was followed by five teachers (23.81%) stating they would relocate to either a rural or a bush area. Three (14.29%) of the rural teachers surveyed said they would relocate to urban areas and only one teacher (4.76%) indicated all areas.

For the bush areas, the greatest number of teachers said they would relocate to bush areas, with seven teachers (36.84%) choosing that option. This was followed by six teachers (31.58%) who said they would move to rural areas. Two teachers (10.53%) indicated either rural or bush, and only one teacher (5.26%) stated a preference for moving to an urban area.

From this information, it is clear that overall most teachers would prefer to move to rural areas. However, looking at the data for each geographic region, it would seem that urban teachers would prefer to stay urban, rural teachers would prefer to stay rural, and bush teachers would like to remain in the bush.

Summary

The data presented in this chapter indicate the largest percentage of industrial arts teachers in the public schools of Alaska are male, white and 41 years of age. Of these teachers, 53.37% have their Bachelor's degree and 39.53% have their Master's. Educationally, most (53.48%) have received their highest degree from colleges and universities located in the northwest and southwest regions of the United States. Of the 33.72% of the teachers who were currently working towards a higher degree, 17.44% were working towards a higher degree in industrial arts.

Of the teachers surveyed, 91.86% held a Type A certificate from the State of Alaska; this certificate was either held alone or in conjunction with an additional certificate type. Only one teacher (1.16%) had a Type T (temporary) certificate. Of the 86 teachers surveyed, only a small percent (8.14) were not endorsed in either industrial arts or vocational education. Overall, the teachers who were teaching industrial arts in Alaska were properly educated in the subject and had the correct endorsement.

Salaries in the $45,000 and above range were received by 32.56% of industrial arts teachers in Alaska. Only one teacher (1.16%) indicated having a salary in the $0 to $24,999 range. The median salary for industrial arts teachers was in the $40,000 to $44,999 range, which is the average for all teachers in the state. In general, most urban teachers drew higher salaries than their counterparts in rural and bush locations. However, urban teachers were, for the most part, older and had more years of experience and education than those teachers in the other geographic areas.

Of the teachers who had previously taught outside of the state, the greatest number came from the northwest, with 23.26% of those surveyed. This was followed by the midwest with 17.44% and the southwest with 15.12%. Between the location of schools attended and previous teaching location, there seems to be a tendency for Alaska

industrial arts teachers to relocate from the northwest part of the country. It would be difficult to determine whether this is totally by teacher choice or if the hiring practices of school districts in Alaska have an influence on this finding.

In looking at curricular areas taught, most teachers (69.77%) indicated that they taught classes in woodworking; 59.30% said they had classes in drafting. Both the rural and the bush areas had more teachers reporting that they taught classes in carpentry and welding than did the urban areas; auto mechanics was about equal throughout the state at 26.74%. The effect that the existence of vocational high schools in urban areas may have had on these statistics was not included in this study and so no real conclusion can be offered.

The majority of the teachers in this study indicated that their classes ranged in size from 6 to 25 pupils. Urban areas reported the largest teacher/pupil ratio, at 21 to 25 students per class. The rural areas were next with 11 to 15 pupils per class. The smallest teacher/pupil ratio was reported by the bush areas at 6 to 10 students per class.

The most common grade levels taught were those from grades 9 to 12, with 52.33% of the teachers reporting as such. This area was the mode for both rural and urban areas. The bush had its mode in grade levels 7 to 12.

Most teachers (75.58%) indicated that if they were to relocate, they would do so within the state of Alaska. Those teachers who would relocate indicated that they would stay in the same type of area as their present teaching position. Urban teachers would prefer to stay in urban areas, rural teachers would stay in rural areas, and bush teachers would choose to remain in bush areas. However, taking into account all of the teachers in this study from all three geographic locations, the greatest number of teachers would select a rural site as their first relocation choice.

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to compare the status of industrial arts teachers in Alaska with relationship to: (1) education, (2) experience, (3) class enrollment, and (4) salary.

The study utilized industrial arts teachers who were in the public schools of Alaska. Also, the study was limited to those teachers who had been identified as industrial arts teachers in the 1986 Alaska Education Directory. As this study only included industrial arts, no teachers identified as vocational trades instructors were surveyed. However, some vocational trades teachers were included in the study if the directory had identified them as teaching industrial arts.

Questionnaires were sent to 105 industrial arts teachers in Alaska. Of the 105 questionnaires that were sent, 86 were returned, and these provided the data for the study. The questionnaire was selected as the instrument for the gathering of data because of its economy and because of the ease and reliability in interpreting these

types of data. Determination of the questionnaire's content was guided by the statement of the problem and the objectives of the study.

The statistical treatment used in analyzing the data was of a descriptive nature. This was a study of existing conditions and objectives were developed so that the study could be measured. These objectives addressed the following areas:

(1) To determine the status of industrial arts teachers in Alaska with respect to teaching experience and related work experience.

(2) To compare the relative enrollments of industrial arts programs in three geographic locations.

(3) To determine the status of industrial arts teachers in Alaska with respect to origin, college attended, and degrees received.

(4) To compare the status of industrial arts teachers in Alaska with respect to salary in three geographic locations.

(5) To determine and to compare industrial arts teacher job satisfaction in three geographic locations.

Findings

Based on the analysis of data collected in this study, the following findings are offered:

(1) The average industrial arts teacher in Alaska fits the following profile: The teachers for the most part are male, Caucasian, and 41 years of age.

(2) Of the 86 industrial arts teachers participating in the study, 79 held a Type A certificate. Only one teacher held a Type T certificate, and eight held a Type D certificate. Of the 86 teachers of industrial arts, 65.11% had an industrial arts endorsement. Of the participants, 52.33% had obtained their Bachelor's degree and 39.53% held a Master's degree. Only 1.16% had an Associate degree, and only 1.16% had earned a Doctorate degree. Of the 86 teachers in the study, 30.23% said they were working towards their Master's degree.

(3) For most Alaska industrial arts teachers, the geographic locations from which their highest degree was earned were the Northwest and Southwest. Most (53.48%) received their highest degrees from colleges and universities located in these two areas, each of which were reported by 26.74% of those surveyed.

(4) Of those teachers who had previously taught outside of the state, the greatest number came from the Northwest, with 23.26% of those surveyed. This was followed by the Midwest with 17.44%, and the Southwest with 15.12%.

(5) The median salary for industrial arts teachers was in the $40,000 to $44,999 range, which is also the average for all teachers in the state. It is clear from the findings that urban teachers in general have higher salaries than either the rural or bush teachers. However, most urban teachers were older and had more years of experience and education than those teachers in the other geographic locations within the state.

(6) The largest number of teachers reported they had 9 to 15 years of teaching experience. Of urban teachers, the greatest number was in the 16 to 20 year category. This was followed by the rural teachers who had a majority falling in the 9 to 15 year category. The bush teachers had the fewest years of experience, with 3 to 5 years being the average for this group.

(7) As a whole, the greatest number of industrial arts teachers taught classes at the 9 to 12 grade levels. When broken down by geographic location, urban and rural areas still had their greatest number of teachers in the 9 to 12 grade category, but the bush shifted to the 7 to 12 grade range. There were no teachers in the bush areas who indicated having classes at the sixth-grade level, in contrast to both urban and rural areas which reported teachers in the middle schools.

(8) The greatest number of teachers reporting they had a student/teacher ratio in the 21 to 25 pupil area was found in the urban school districts. Rural areas indicated a majority of teachers having a teacher/student ratio of 11 to 15 pupils per class. Bush locations had the smallest teacher/student ratio, with most teachers reporting from 6 to 10 pupils per class.

(9) The data for the curriculum areas show the greatest number of teachers had classes in woodworking; this area included 69.77% of all respondents. Urban areas reported that 58.54% of their teachers had classes in woodworking, while 83.33% of rural teachers held such classes, as did 76.19% of the bush teachers.

(10) Drafting was listed as the second most commonly taught class for the total population, with 59.30% of all teachers having classes in this area. This subject area had a majority of urban teachers listing this as one of the subject areas taught. Rural areas listed this as their second most frequently taught class, and in the bush, drafting tied with small engines for third place.

(11) Small engine classes were taught by 45.83% of the rural teachers and 47.62% of the bush teachers. In urban areas, only 17.07% reported having classes in this subject.

(12) Welding was taught by 12.20% of the teachers in urban schools compared to 51.11% of the rural and bush teachers.

(13) Plastics was taught by 26.83% of the urban teachers. However, only one teacher (4.17%) taught this subject in rural areas and no teachers were conducting classes in plastics in the bush.

(14) Of the total population, 2.39% conducted classes in transportation, with no teacher in either the bush or the rural areas teaching this subject.

(15) No teacher from any of the three geographic areas reported teaching classes in robotics.

(16) Seventy-five percent of industrial arts teachers indicated that they would continue to teach in Alaska if relocated from their present position.

Conclusions

As a result of this study, certain conclusions may be drawn from the findings. These conclusions are as follows:

(1) Industrial arts programs in the Alaska public schools are based almost entirely upon the traditional areas of industrial arts.

(2) Both the rural and the bush areas tend to be more traditional than the urban areas, even though rural and bush teachers are generally younger than those in urban areas.

(3) Urban teachers in general draw higher salaries than do teachers in rural or bush areas. The bush teachers had the lowest salary levels of the three geographic areas.

(4) Urban teachers in general are older and have more education and more years of experience than their counterparts in other areas of the state.

(5) Urban areas have the highest enrollments of any of the three areas. They were followed by rural and bush, in that order.

(6) The industrial arts teacher population is very homogeneous, consisting primarily of white males.

(7) There is a strong tendency for teachers to relocate from the northwest and southwest parts of the country.

(8) Industrial arts teachers show a high sense of satisfaction with staying and teaching in the state of Alaska.

Recommendations

Based upon the findings and conclusions of this study, further research is recommended in the following areas:

(1) An extensive study should be conducted to determine the role and the scope of industrial arts curricula in the state of Alaska with regard to technology education.

(2) A study of vocational education programs in the state should be undertaken to determine the role they play and the effect they may have on industrial education.

(3) A study should be made to determine the future vocational areas for which the students of Alaska should be preparing.

(4) In-service training at a state and a local level should be provided to increase both teacher awareness and competency in some of the non-traditional areas of industrial arts such as those involving Native culture and also technology.

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APPENDICES

APPENDIX A

ALASKA DEPARTMENT OF EDUCATION LETTER

STATE OF ALASKA
DEPARTMENT OF EDUCATION
OFFICE OF ADULT AND VOCATIONAL EDUCATION

STEVE COWPER, GOVERNOR

GOLDBELT PLACE
801 WEST 10TH STREET
P.O BOX F
JUNEAU, ALASKA 99811
PHONE: (907) 465-4685

June 29, 1987

Mr. Guy Bonnard
422 Rollens
Missoula, Montana 59801

Dear Guy:

Alaska Department of Education is currently studying the status of vocational education certification and endorsements. We have had a difficult time trying to clarify what the qualifications of an Industrial Arts graduate are in terms of training to teach a variety of areas.

It would be helpful to us to use your survey to determine who is teaching what, as compared to their college transcripts.

I have enclosed our Industrial Education model curriculum to help you in this process.

Sincerely,

Karen Ryals

Karen Ryals
Acting Administrator
Office of Adult and
Vocational Education

342adm/sor

APPENDIX B

QUESTIONNAIRE

INDUSTRIAL ARTS TEACHER
SURVEY INFORMATION SHEET

For each question, please place a check (/) in the appropriate answer box. Some questions may have more than one answer. In some cases written answers will be needed.

(1) Age _____ (2) Sex: □A. Male □B. Female

(3) Ethnicity:

□A. White □D. Spanish □G. Other
□B. Black □E. Asian
□C. American Indian □F. Eskimo Aleut

(4) Highest degree that you have earned:

□A. High School Diploma State:_____
□B. Associate Degree College Attended:_____
□C. Bachelor's Degree _____
□D. Master's Degree _____
□E. Doctorate Degree _____
□F. Other (specify)
_____ _____

(5) Are you presently working toward a degree?

□A. Yes □B. No

If yes, what degree?

□A. Bachelor's □B. Master's □C. Doctorate
□D. Other (specify) _____

What area will the degree be in?

□A. Industrial Arts □B. Other

(6) What type of Alaska teaching certificate do you now hold?

Title of certificate:

□A. Type A □B. Type B □C. Type D
□D. Type T temporary □E. Other (specify) _____

What is the area of endorsement of your certificate?

□A. Industrial Arts □B. Vocational
□C. Other (specify) _____

(7) What is the length of your present teaching contract? [Include extended contract month(s) but not time off for summer vacations.]

□A. 9 months □C. 11 months □E. Part-time

□B. 10 months □D. 12 months

(8) Does your school district give credit for occupational experience, other than teaching experience, in determining salary?

□A. Yes □B. No

If yes, please explain how your district uses occupational experience for placement on the salary schedule.

(9) Your annual 188-day teaching salary for this school year (before taxes) is:

□A. Below $24,999 □D. $35,000-$39,999

□B. $25,000-$29,999 □E. $40,000-$44,999

□C. $30,000-$34,999 □F. $45,000 and above

(10) How many years have you been teaching in Alaska?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(11) How many years of teaching experience do you have?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(12) How many years have you lived in Alaska?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(13) Have you ever taught school outside of Alaska?

□A. Yes □B. No

If yes, where was your last teaching job outside of Alaska?

□A. Northwest (U.S.) □D. Southeast (U.S.)

□B. Southwest (U.S.) □E. Northeast (U.S.)

□C. Midwest (U.S.) □F. Other_____

(14) How many years of industrial work experience do you have specifically related to the subject(s) you presently teach?

□A. None □D. 6-8 □G. Over 21
□B. 0-2 □E. 9-15
□C. 3-5 □F. 16-20

(15) At what grade level do you teach Industrial Arts?

□A. 7-9 □C. 7-12
□B. 9-12 □D. Other (specify)_____

(16) What is your average number of students per class in Industrial Arts for the 1985-86 school year?

□A. 1-5 □C. 11-15 □E. 21-25
□B. 6-10 □D. 16-20 □F. Above 26

(17) What subject(s) have you taught in Industrial Arts during this school year?

□A. Machine Shop □I. Robotics
□B. Auto Mechanics □J. World of Work
□C. Welding □K. Transportation
□D. Carpentry □L. Plastics
□E. Drafting □M. Graphic Arts
□F. Woodworking □N. Other (specify):
□G. Small Engines _____
□H. General Shop _____
_____

(18) What percent of your school day is devoted to teaching Industrial Arts?

□A. 0-25% □C. 51-75%
□B. 26-50% □D. 76-100%

Use the following definitions of terms for questions 19-21. <u>Bush</u>: population less than 1,000; <u>Rural</u>: population between 1,000-5,000; <u>Urban</u>: population greater than 5,000. <u>School</u> means the building in which you work, not the whole district.

(19) In what type of area is your school located?

□A. Bush □B. Rural □C. Urban

(20) Have you previously taught in a different district in Alaska?

□A. Yes □B. No

If yes, was that school:

□A. Bush □B. Rural □C. Urban

(21) If you moved, would you like to continue teaching in Alaska?

□A. Yes □B. No

If yes, would that school be:

□A. Bush □B. Rural □C. Urban

Guy J. Bonnand
c/o Metlakatla High School
Box 7
Metlakatla, Alaska 99926

APPENDIX C

INTRODUCTORY LETTER

Montana State University
Bozeman, Montana 59717

Department of Agricultural and Industrial Education
College of Agriculture

December 8, 1986

Dear Industrial Arts Teacher:

I have been a teacher in the state of Alaska for the past nine years. I am presently involved in conducting a survey on the status of Industrial Education in Alaska. This is for partial fulfillment of my Master's Degree at Montana State University.

I realize that your day is already filled with requests to "take a few minutes to do this or that," but I would greatly appreciate it if you would give a few minutes thought to the enclosed questionnaire. Please complete the questionnaire and return it to me by stapling it and dropping it in the mail.

Total confidentiality will be maintained throughout the study and reporting of the data. Upon your request, a summary of the findings will be sent to you at the conclusion of the study. Your assistance is extremely important to the completion of this study and will be greatly appreciated.

I hope your year has been a productive one and that it continues to go well. Thank you for your help in completing the questionnaire.

Sincerely,

Guy J. Bonnand

Telephone (406) 994-3201
Amberson, Polette, Bruwelheide, Roiter, Wheatley
(406) 994-3691
Bishop, Shelhamer

APPENDIX D

PILOT QUESTIONNAIRE

INDUSTRIAL ARTS TEACHER
SURVEY INFORMATION SHEET

For each question, please place a check (/) in the appropriate answer box. Some questions may have more than one answer. In some cases written answers will be needed.

(1) Age _____ (2) Sex: □A. Male □B. Female

(3) Ethnicity:

□A. White □D. Spanish □G. Other
□B. Black □E. Asian
□C. American Indian □F. Eskimo Aleut

(4) Highest degree that you have earned:

□A. High School Diploma State:_____
□B. Associate Degree College Attended:_____
□C. Bachelor's Degree _____
□D. Master's Degree _____
□E. Doctorate Degree _____
□F. Other (specify)
_____ _____

(5) Are you presently working toward a degree?

□A. Yes □B. No

If yes, what degree?

□A. Bachelor's □B. Master's □C. Doctorate
□D. Other (specify) _____

What area will the degree be in?

□A. Industrial Arts □B. Other

(6) What type of Alaska teaching certificate do you now hold?

Title of certificate:

□A. Type A □B. Type B □C. Type D
□D. Type T temporary □E. Other (specify) _____

What is the area of endorsement of your certificate?

□A. Industrial Arts □B. Vocational
□C. Other (specify) _____

(7) What is the length of your present teaching contract?

□A. 9 months □C. 11 months □E. Part-time

□B. 10 months □D. 12 months

(8) Does your school district give credit for occupational experience in determining salary?

□A. Yes □B. No

If yes, please explain how your district uses occupational experience for placement on the salary schedule.

(9) Your annual 188-day teaching salary for this school year (before taxes) is:

□A. Below $25,000 □D. $35,000-$40,000

□B. $25,000-$30,000 □E. $40,000-$45,000

□C. $30,000-$35,000 □F. Above $45,000

(10) How many years have you been teaching in Alaska?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(11) How many years of teaching experience do you have?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(12) How many years have you lived in Alaska?

□A. 0-2 □C. 6-8 □E. 16-20

□B. 3-5 □D. 9-15 □F. Over 21

(13) Have you ever taught school outside of Alaska?

□A. Yes □B. No

If yes, where was your last teaching job outside of Alaska?

□A. Northwest (U.S.) □D. Southeast (U.S.)

□B. Southwest (U.S.) □E. Northeast (U.S.)

□C. Midwest (U.S.) □F. Other_____

(14) How many years of industrial work experience do you have specifically related to the subject(s) you presently teach?

□A. None □D. 6-8 □G. Over 21
□B. 0-2 □E. 9-15
□C. 3-5 □F. 16-20

(15) At what grade level do you teach Industrial Arts?

□A. 7-9 □C. 7-12
□B. 9-12 □D. Other (specify)_____

(16) What is your average number of students per class in Industrial Arts for the 1985-86 school year?

□A. 1-5 □C. 11-15 □E. 21-25
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□C. Welding □K. Transportation
□D. Carpentry □L. Plastics
□E. Drafting □M. Graphic Arts
□F. Woodworking □N. Other (specify):
□G. Small Engines _____
□H. General Shop _____
_____

(18) What percent of your school day is devoted to teaching Industrial Arts?

□A. 0-25% □C. 51-75%
□B. 26-50% □D. 76-100%

Use the following definitions of terms for questions 19-21. <u>Bush</u>: population less than 1,000; <u>Rural</u>: population between 1,000-5,000; <u>Urban</u>: population greater than 5,000. <u>School</u> means the building in which you work, not the whole district.

(19) In what type of area is your school located?

□A. Bush □B. Rural □C. Urban

(20) Have you previously taught in a different district in Alaska?

□A. Yes □B. No

If yes, was that school:

□A. Bush □B. Rural □C. Urban

(21) If you moved, would you like to continue teaching in Alaska?

□A. Yes □B. No

If yes, would that school be:

□A. Bush □B. Rural □C. Urban

Guy J. Bonnand
c/o Metlakatla High School
Box 7
Metlakatla, Alaska 99926

APPENDIX E

FOLLOW-UP LETTER

Montana State University
Bozeman, Montana 59717

Department of Agricultural and Industrial Education
College of Agriculture

January 19, 1987

Dear Industrial Arts Teacher:

I am writing this as a follow-up to a letter and questionnaire sent to you a few weeks ago. If you have recently responded to the questionnaire, please disregard this notice. If you have not yet responded to the survey, I would like to encourage you to respond. The intent of the survey is to compare the status of industrial arts teachers in Alaska in relation to education, experience, class enrollment and salary by various geographic locations. Therefore, your response is very important.

You will find enclosed another copy of the questionnaire. Please complete the form and return it to me. The information you will be providing will be held in strict confidence and used only in an anonymous form.

Thank you for giving your time and prompt attention to this project.

Sincerely,

Guy J. Bonnand

Telephone (406) 994-3201
Amberson, Polette, Bruwelheide, Roiter, Wheatley
(406) 994-3691
Bishop, Shelhamer

APPENDIX F

TEACHER CERTIFICATION REQUIREMENTS

Alaska Department of Education
Pouch F
Juneau, AK 99811

Digest of Requirements for Teacher Certification in Alaska

Title of Certificate	Minimum Requirements	Endorsements[5]	Renewal Requirements
Type A Regular Certificate Valid for five years[3] $30 application fee[4]	(a) Completed an approved teacher education program[1], (b) has a bachelor's degree, (c) has a recommendation (endorsement) from the preparing institution, and (d) has recency credit[2]	*Examples:* Elementary Secondary Special Education K-12 School librarian Guidance counselor Speech therapist Vocational	Six semester hours of renewal credit[3] earned during the life of the expiring certificate.
Type B Administrative Certificate Valid for five years $30 application fee[4]	(a) Completed an approved program[1] in school administration, (b) has a masters degree or higher, (c) has a recommendation (endorsement) from the preparing institution, (d) has three years of satisfactory teaching experience on a regular teaching certificate, and (e) has recency credit[2]	*Examples:* School superintendent School principal Administrator of special education Administrator of vocational education	Same as for Type A.
Type C Special Services Certificate Valid for five years $30 application fee[4]	(a) Completed a program in a special service area but not in teacher education, (b) has a bachelor's degree, (c) is recommended by the preparing institution, and (d) has recency credit[2]	*Examples:* Nursing Social work Psychology Speech therapy Library	Same as for Type A.
Type D Vocational Trades Valid for two years $10 application fee	(a) Four or more calendar years of full-time work experience in a trade or vocational pursuit, of which not more than two years may be formal training (trade school, technical institute, etc.), (b) a statement from one or more training agencies or past employers substantiating the experience, and (c) has proof of employment to instruct in trade or vocational area in an accredited school district in Alaska.	Based on the specific trade or vocation area *Examples:* Plumbing Carpentry Auto mechanics Electronics	Three semester hours of credit (academic or non-academic), or additional training and/or work experience, acceptable to the Commissioner of Education, plus evidence of satisfactory service from the chief school administrator. Proof of employment in a school district in Alaska.
Type E Early Childhood Education Certificate Education Associate I Education Associate II Valid for five years $30.00 application fee	**ECE Associate I:** (a) has completed 30-credit university or college early childhood education program requiring at least 400 hours of supervised practicum experience or (b) has received approved Child Development Associate (CDA) Award. **ECE Associate II:** (a) has completed an approved Associate Degree program in ECE, and (b) has completed requirements for ECE Associate I.		Current CDA credential or six semester hours of renewal credit in early childhood education or a related field. Six semester hours of renewal credit in early childhood education or a related field.

[1]Approved programs: Those offered by regionally accredited teacher training institutions which have been approved by the Alaska State Board of Education, or a comparable program in another state, as meeting the minimum requirements established by the "Standards of State Approval of Teacher Education," 1981 NASDTEC Standards.

[2]Recency credits: Six semester hours of credit earned within the five-year period prior to application.

[3]Three of the six semester hours of renewal credit may be by correspondence courses or non-academic credit for the completion of institutes, workshops, travel, etc., with prior approval from the Commissioner of Education.

[4]A fee of $10 will be charged for each endorsement added after the current certificate was issued.

[5]Endorsements reflect the major teaching training areas.

Title of Certificate	Minimum Requirements	Endorsements[5]	Renewal Requirements
Type T Temporary A, B, C Effective September 30, 1983 Valid for one year $30.00 application fee	(a) meets all application requirements for certification except the six semester hours of recency, (b) provides evidence of satisfactory service during at least three of the five years immediately preceding application, (c) has never possessed an Alaska teacher certificate.		Non-renewable.
Letter of Authorization **Type I** Recognized Expert Valid for one school year $10 application fee	(a) Experience qualifying applicant as an expert in a specific area, verified by a detailed resume and (b) a request from the school board through the chief school administrator.	*Examples:* Special languages Local arts	Request of the school board through the chief school administrator.
Letter of Authorization **Type II** Emergency Valid for one school year $10 application fee	Granted in an extreme emergency to an applicant who does not meet the requirements of a regular certificate and only at the request of the school board through the chief school administrator certifying that a regularly certificated person is not available.	*Examples:* Emergency elementary Emergency secondary	Non-renewable.
Letter of Authorization **Type III** Student Teacher Student Teacher No Fee	**Issued at the discretion of the** Commissioner to a student teacher when assigned to a public school for the purpose of completing a course in practice teaching.		

Nothing in this digest will abrogate commitments which were in existence prior to April 1, 1971.

[1]Approved programs: Those offered by regionally accredited teacher training institutions which have been approved by the Alaska State Board of Education, or a comparable program in another state, as meeting the minimum requirements established by the "Standards of State Approval of Teacher Education," 1981 NASDTEC Standards.

[2]Recency credits: Six semester hours of credit earned within the five-year period prior to application.

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