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ABSTRACT

The Industrial Arts Section focused attention during the 1972 fiscal year on career education, the improvement of instruction, and industrial arts growth in Arizona. This annual report outlines accomplishments in each area: development, promotion, and implementation of the career education concept; improvement of instruction through improving the teaching-learning situation, teacher growth and development, curriculum development, public relations activities, and research; and growth by increases in student enrollments, number of schools offering industrial arts education, and innovative programs. However, the number of industrial arts teachers did not increase sufficiently to keep pace with enrollment and program increases. (MF)

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ANNUAL INDUSTRIAL ARTS REPORT

(FISCAL YEAR 1972)

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Supervisor of Industrial Arts

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ANNUAL INDUSTRIAL ARTS REPORT

(Fiscal Year 1972)

The Industrial Arts Section during the 1972 fiscal year has concentrated on the following three areas: (1) Career Education; (2) The Improvement of Instruction; and (3) Industrial Arts Growth. The Industrials Arts Section has made a significant contribution to the concept of Career Education and the improvement of industrial arts education.

Career Education

Many Career Education activities were accomplished by the Industrial Arts Section during the past year.

One of the primary goals of the Industrial Arts Section has been to provide assistance and direction in all phases of Career Education. The Industrial Arts Section provided leadership in the development, promotion and implementation of the Career Education concept.

Development of the Career Education concept required considerable research, a pooling of resources, the sharing of ideas and a great deal of time. The development phase of the Career Education concept involved: (1) the development of a rationale; (2) a review of related literature; (3) the development of a career education philosophy; (4) the application of sound educational psychology; (5) the identification of bodies of knowledge; and (6) the development of a practical approach.

Promotion of the Career Education concept received multi direction. A series of 35 mm slides with synchronized tape narration were produced. In order that the slides and tape series were of professional quality a great amount of effort, time and cost were expended. The slides-tape series were designed to provide for flexibility of use in promoting this new approach to education.

Twenty-one Career Education presentations were given by the Industrial Arts Supervisor to educators, administrators, school board members, and lay persons. The 35 mm slides and synchronized narration proved very effective in: (1) informing educators and lay persons of the concept of Career Education; (2) gaining support for Career Education; and (3) providing direction for the implementation of Career Education.

Slide presentations on "The Role of Industrial Arts in Arizona's Career Education" presented at the Rocky Mountain Conference at Brighton, Utah and the American Industrial Arts Association (A.I.A.A.) Convention at Dallas, Texas resulted in a great deal of national recognition for Arizona's Career Education program. Many educational leaders across the Nation requested copies of the slides and tape, information and literature on the Career Education program in Arizona.

Several news articles were published during the year to promote the concept of Career Education.

An ad hoc committee was formed to determine "the role of industrial arts teacher training institutions in Career Education". Membership of this committee included representatives from Arizona State University, Northern Arizona University and the State Department of Education. Having been formed in the later part of the 1972 fiscal year only one meeting was held; however, meetings scheduled for the 1973 fiscal year are expected to provide the much needed direction our teacher training institutions need in Career Education.

Implementation of the Career Education concept has been well received by industrial arts educators at all levels of education. Industrial Arts education lends itself well to the concept of Career Education. The objectives of Career Education and industrial arts are identical with complete harmony being experienced.

Industrial arts programs provided meaningful prevocational education in the four occupational clusters of: (1) communications; (2) construction; (3) manufacturing; and (4) transportation.

Broad career exploration experiences, in the above mentioned occupational clusters were provided by 201 junior high schools (grade 7-8)to an estimated 37,941 students. (See Figure 1.)

In-depth career exploration programs in the occupational clusters of communications, construction, manufacturing, and transporation were offered by 119 high schools (grades 9-12) to an estimated 45,008 students. (See Figure 2.)

Industrial arts programs are providing realistic hands-on activities which makes education relevant to the "world of work". Most industrial arts programs are now emphasizing the development of cognitive skills. Industrial arts teachers who integrated the curriculum have experienced remarkable success.

Industrial arts has made a significant contribution to Career Education.

The Improvement of Instruction

The primary goal of industrial arts supervision has been the improvement of instruction. In accomplishing this goal, activities were centered around the following five areas: (1) improving the teaching-learning situation; (2) teacher growth and development; (3) curriculum development; (4) public relations; and (5) research.

Improving the teaching-learning situation was considered one of the most important functions of the Industrial Arts Section and activities in this area received a high priority. Some of the activities to achieve this objective included: (1) consultant service to 153 teachers and administrators as requested; (2) recruitment and matching of industrial arts teachers to teaching positions as requested by local schools; (3) organizing an Industrial Arts Advisory Council and holding two meetings for the purpose of providing direction to the industrial arts programs; (4) processing of Federal Excess Personal Property (F.E.P.P.) request for forty-one industrial arts (prevocational) programs; (5) facility planning assistance to four schools; (6) program evaluations of nine junior high

schools, eleven high schools, and seven community colleges; (7) promotion of innovative industrial arts programs (Industrial Arts Curriculum Project "I.A.C.P." and American Industry Project) and the concept of Career Education; (8) distribution of instructional materials (curriculum guides, pamplets and educational publications); (9) visitations to 131 schools (approximately 485 teachers and their administrators); (10) assistance in conducting the annual Plymouth Trouble Shooting Contest (37 schools participating).

Teachers growth and development activities were increased during the past year as a result of state/federal funding, teacher training institutions involvement, and support from local educational agencies and business-industry. The major activities conducted were: (1) three workshops on the following innovative industrial arts programs: (a) I.A.C.P. World of Construction, (b) I.A.C.P. World of Manufacturing, and (c) American Industry Project; (2) a power-mechanics workshop; (3) six workshops on "How to Make Super 8 mm Film Loops"; (4) a two day Man/Society/Technology Forum to bring together education, business and industry; (5) a workshop on "How to Develop 35 mm Slide Presentations"; (6) three educational programs held at Western Maricopa, Eastern Maricopa and Cochise County to present a three hour program on: (a) Career Education, (b) American Industry Project, (c) Industrial Arts Curriculum Project (I.A.C.P.) and (d) Traditional Industrial Arts; (7) twenty-one Career Education presentations (19 in Arizona and 2 out of state); (8) organizing of Northern Arizona Industrial Education Association; and (9) promoting of membership of industrial arts teacher in professional associations.

Curriculum development accomplished during the year included: (1) revision of the Eye Safety Bulletin; (2) development of a guide titled: A Guide for Teaching Mass Production in the School (to be published during the 1973 FY); (3) consultant service and assistance to Northern Arizona University in the development of a guide titled: A Guide for Administrators and Teachers at the Junior High Schools; (4) consultant service to local school districts in the development of curriculum, proposals, and instructional materials; (5) holding of three Industrial Arts Curriculum Guide Advisory Council Meetings to determine direction and priorities for curriculum development; (6) development of three 35 mm slide-tape programs titled: (a) Career Education in Arizona (b) The Role of Industrial Arts in Career Education, and (c) Industrial Arts in Arizona; (7) production of a Super 8 mm, color, sound, movie titled: American Industry Project; and (8) assistance to Arizona State University in the development of a 35 mm slide-tape presentation titled: Industrial-Technical Education Curriculum (I.T.E.C.).

Public relations activities were limited to: (1) organizing the Industrial Arts Advisory Council for the State Fair; (2) Arizona State Fair Exhibits which included: (a) arrangement of displays, (b) judging of exhibits, (c) presentation of awards, (d) slide-tape and movie presentations of industrial arts programs, and (e) publicity; (3) committee work on selection of "the outstanding industrial arts teacher of the year"; (4) speaches for various school functions and events; (5) promotion and arrangements for having the 1978 American Industrial Arts Association (A.I.A.A.) Convention in Phoenix, Arizona; (6) news articles for educational newsletters, professional bulletins and the press; (7) presentations and educational displays at the Rocky Mountain States Conference in Brighton, Utah and the American Industrial

Arts Association (A.I.A.A.) Convention in Dallas, Texas on the role of industrial arts in Career Education; and (8) presentation of industrial arts award to students, teachers, and schools.

Research conducted during the year were: (1) a survey of all schools offering industrial arts education to determine: (a) assistance needed; (b) program changes; (c) consultant service priorities; and (d) program changes; (2) industrial visitations of selected industries in the United States and Canada to compare current instruction with modern industrial practices; (3) review of industrial arts and related literature to keep abreast with technological changes and innovative industrial education programs; and (4) collection, tabulation, and statistical treatment of enrollment data to determine present status of industrial arts programs and trends.

The estimated student enrollments by subject for the 1971-72 academic school year for the junior high schools and high schools are shown in Figures 1 and 2 respectively.

MAJOR SUBJECT AREAS	ENROLLMENTS BY SEX AND GRADE						TOTALS
	MALE			FEMALE			
	7	8	Total	7	8	Total	
Auto-Power Mechanics	2	271	273	0	4	4	277
Crafts	541	720	1,261	1,319	869	2,188	3,449
Drafting	199	429	628	86	199	285	913
Electricity-Electronics	0	290	290	0	13	13	303
Graphic Arts	0	44	44	0	0	0	44
Metalwork	0	159	159	13	11	24	183
Woodwork	263	1,823	2,086	82	84	166	2,252
IACP(Construction)	800	541	1,341	0	0	0	1,341
IACP(Manufacturing)	0	371	371	0	0	0	371
American Industry Project	183	278	461	0	0	0	461
General Industrial Arts	13,353	14,389	27,742	161	431	592	28,334
TOTAL ENROLLMENTS	15,341	19,315	34,656	1,674	1,611	3,285	37,941

Fig. 1. Estimated junior high school industrial arts enrollments for the 1971-72 academic school year.

MAJOR SUBJECT AREAS	ENROLLMENTS BY SEX AND GRADES										TOTALS
	MALE					FEMALE					
	9	10	11	12	Total	9	10	11	12	Total	
Auto-Power Mechanics	1,201	1,668	2,192	1,731	6,792	21	32	51	25	129	6,921
Crafts	1,431	1,226	852	820	4,329	397	764	754	614	2,529	6,858
Drafting	2,230	1,564	1,420	1,190	6,404	110	48	71	55	284	6,688
Electricity-Electronic	1,104	795	855	547	3,301	0	0	5	3	8	3,309
Graphic Arts	476	493	436	296	1,701	79	255	193	74	601	2,302
Metalwork	3,258	1,979	1,600	1,508	8,345	36	28	15	25	104	8,449
Woodwork	3,951	1,979	1,925	1,238	9,438	79	79	107	110	354	9,792
IACP(Construction)	27	27	27	27	108	0	0	0	0	0	108
IACP(Manufacturing)	0	0	0	8	8	0	0	0	17	17	25
American Industry Project	41	35	25	39	140	6	8	3	4	21	161
General Industrial Arts	1	0	127	94	222	0	0	166	7	173	395
TOTAL ENROLLMENTS	13,719	10,112	9,459	7,498	40,788	722	1,206	1,362	930	4,220	45,008

Fig. 2. Estimated high school industrial arts enrollments for the 1971-72 academic school year.

Industrial Arts Growth

Industrial arts growth is concerned with student enrollments, number of schools offering industrial arts education, number of teachers, and type and quality of the programs.

Student enrollments in industrial arts courses during the 1971-72 academic school year are estimated to be 37,941 for junior high school programs as shown in Figure 1 and 45,008 for the high schools as indicated in Figure 2. These enrollments represent an increase from the previous year of 2.4 percent for the junior high schools and 3.3 percent at the high schools.

During the past five years industrial arts has had substantial enrollment gains at both the junior high and high school levels. Junior high schools experienced a healthy 43.7 percent gain during this period of time as estimated in Figure 3. The enrollment increases at the high schools during this same time almost doubled with an impressive 48.7 percent gain as represented in Figure 4.

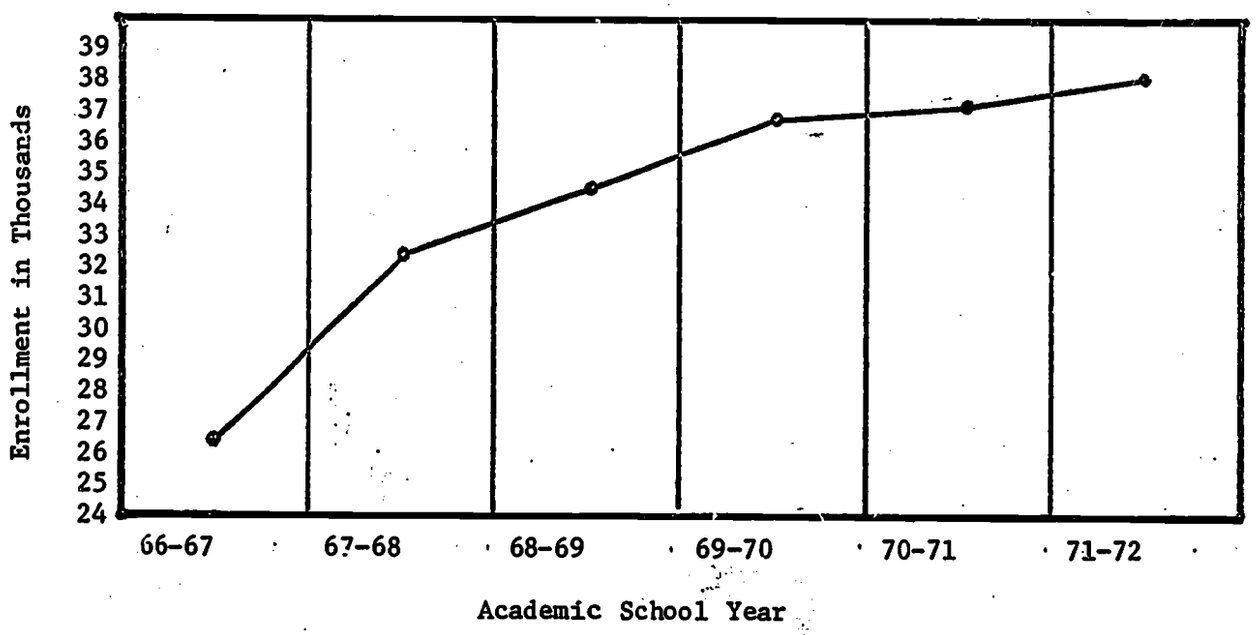

Fig. 3 Estimated junior high school industrial arts enrollment growth

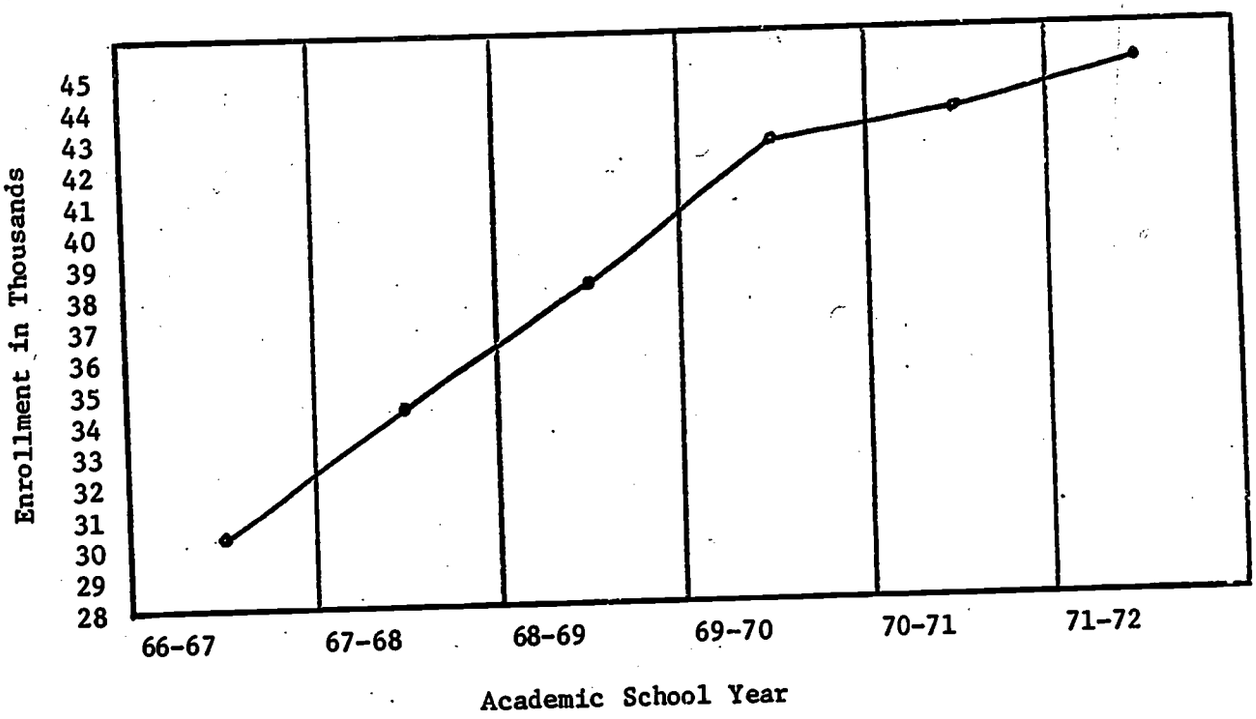

Fig. 4 Estimated high school industrial arts enrollment growth during a five year period

The enrollment gains for industrial arts programs are comparable to or greater than the total enrollment gains in Arizona during this same period of time.

Number of schools offering industrial arts education during 1971-72, as shown in Figure 5, was 304 compared to 250 in 1966-67. This addition of fifty-four schools to offer industrial arts programs during a five year period is most encouraging. It appears industrial arts education is experiencing a healthy growth in Arizona.

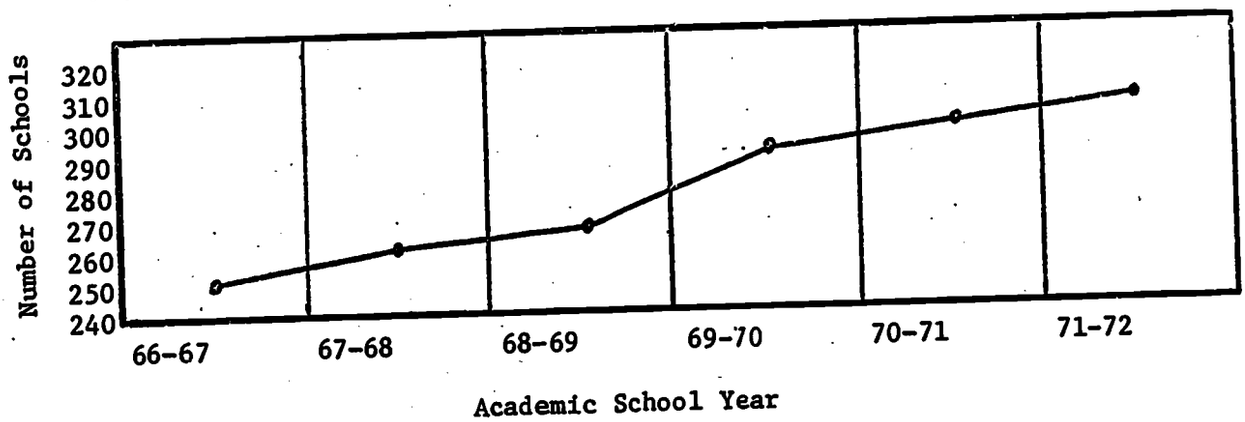

Fig. 5 Industrial arts program growth

Number of teachers in industrial arts has not kept pace with enrollment and program increases. During 1971-72 there were only 760 teachers for an estimated 82,949 students. This state-wide teacher-student ratio which averaged one teacher per 109 students is considered high.

As shown in Figure 6, the number of industrial arts teachers has increased greatly during the past five years; however, numerous schools experienced difficulty in obtaining the number of qualified teachers needed for their programs.

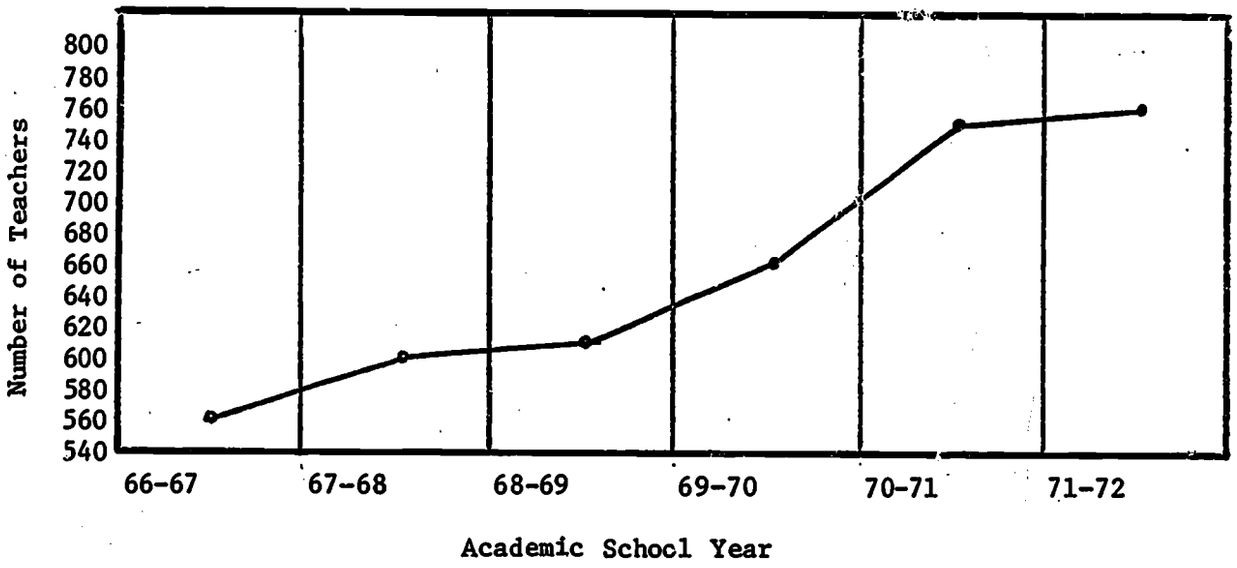

Fig. 6 Industrial arts teacher growth

The teacher training institutions in Arizona will have to produce more industrial arts teachers to meet the educational needs of Arizona.

Type and quality of the industrial arts programs in Arizona are changing. Innovative industrial arts programs are receiving a great deal of attention from educators in the State.

The Industrial Arts Curriculum Project (I.A.C.P.) which consist of two parts -- the World of Construction designed for the 7th grade and the World of Manufacturing developed for 8th grade students has emerged as a healthy industrial arts movement. This program lends itself well to the cluster approach and the concept of Career Education. The World of Construction and World of Manufacturing phases of I.A.C.P. provide for broad career exploration which is an important objective of prevocational education.

The American Industry Project is another innovative program which has generated much excitment and interest. This program, designed for all levels of education, is centered around the conceptual approach. The fourteen concepts of industry which are applicable to all of industry are stressed in this program. Students in the American Industry Project learn all aspects of management, production and personnel by: forming a corporation; selecting, designing, and producing a product; marketing and selling the product; and sharing the profits.

The American Industry Project is an excellent approach for teaching "The Free Enterprise System" at the secondary level to meet the requirement of Chapter 86 House Bill 299.