

DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION

BULLETIN, 1916, No. 32

SOME FACTS CONCERNING MANUAL  
ARTS AND HOMEMAKING SUBJECTS  
IN ONE HUNDRED FIFTY-SIX CITIES

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WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1916

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## SOME FACTS CONCERNING MANUAL ARTS AND HOME- MAKING SUBJECTS IN 156 CITIES.

The confused and chaotic condition which characterizes vocational and industrial education at the present time is evidence of the fact that certain far-reaching and fundamental adjustments are going on in the educational world. These adjustments involve, on the one hand, the school in all of its aspects and at all of its stages, and, on the other hand, the various industries and occupations with all of their social and economic implications. No one seems to know with any degree of certainty what solution the problem demands; nor is anyone able to predict with precision and accuracy what the outcome of the movement may be. Many interesting experiments have been and are now being carried on for the purpose of meeting present needs and satisfying various demands, but the problem in the large seems little nearer a satisfactory solution than when the experimentation began.

Educational, vocational, industrial, and social surveys are becoming common. These set forth the facts and make clear the existing conditions in each of these fields of activity. If carefully and scientifically conducted, the findings of survey commissions are valuable in determining needs and policies. It is on the basis of present practices and existing conditions that the needs and policies of the future must be determined.

It was the purpose of this investigation to determine the existing conditions and practices in the manual arts and homemaking subjects with reference to—

1. Nature and character of the work in the different grades and in the high school.
2. The number of minutes per week and the relative amount of time devoted to these subjects.
3. Methods used and their adaptation to age and grade of pupils.
4. Nature and amount of correlation with other subjects.
5. Methods of disposing of finished products of shops and kitchens.
6. The dominant aims in the teaching of these subjects and the prevalence of each.
7. Enrollment in vocational courses in elementary and in high schools.
8. Cost per pupil in different schools and cities.
9. Percentage of pupils entering work for which manual arts and homemaking courses prepared them.
10. Norms and standards of practice in all the above.

The method used in collecting the data was that of the questionnaire. A copy of the form used is here reproduced.

QUESTIONNAIRE ON THE TEACHING OF THE MANUAL ARTS, HOME MAKING, AND VOCATIONAL SUBJECTS.

Name.....City.....State.....

1. Underline the courses offered in your schools and state the number of weeks in each course grade by grade.

GRADES.

|                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | I | II | III | IV |
|------------------------------------|---|---|---|---|---|---|---|---|---|----|-----|----|
| Paper folding, cutting, etc.       |   |   |   |   |   |   |   |   |   |    |     |    |
| Cardboard construction.            |   |   |   |   |   |   |   |   |   |    |     |    |
| Raffia and basketry.               |   |   |   |   |   |   |   |   |   |    |     |    |
| Weaving and textiles.              |   |   |   |   |   |   |   |   |   |    |     |    |
| Knife work, coping saw, etc.       |   |   |   |   |   |   |   |   |   |    |     |    |
| Clay work, plastelene, etc.        |   |   |   |   |   |   |   |   |   |    |     |    |
| Leather work, etc.                 |   |   |   |   |   |   |   |   |   |    |     |    |
| Art metal work.                    |   |   |   |   |   |   |   |   |   |    |     |    |
| Jewelry.                           |   |   |   |   |   |   |   |   |   |    |     |    |
| Printing and bookbinding.          |   |   |   |   |   |   |   |   |   |    |     |    |
| Joinery, cabinetmaking, carpentry. |   |   |   |   |   |   |   |   |   |    |     |    |
| Wood turning, pattern making.      |   |   |   |   |   |   |   |   |   |    |     |    |
| Foundry.                           |   |   |   |   |   |   |   |   |   |    |     |    |
| Machine shop.                      |   |   |   |   |   |   |   |   |   |    |     |    |
| Forge shop.                        |   |   |   |   |   |   |   |   |   |    |     |    |
| Concrete construction.             |   |   |   |   |   |   |   |   |   |    |     |    |
| Cooking.                           |   |   |   |   |   |   |   |   |   |    |     |    |
| Sewing.                            |   |   |   |   |   |   |   |   |   |    |     |    |
| Millinery.                         |   |   |   |   |   |   |   |   |   |    |     |    |

2. State the number of periods per week and total number of minutes per week given to manual arts and homemaking in the grades.

GRADES.

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | I | II | III | IV |
|---|---|---|---|---|---|---|---|---|---|----|-----|----|
| Periods per week.                                     |   |   |   |   |   |   |   |   |   |    |     |    |
| Total minutes per week to manual arts and homemaking. |   |   |   |   |   |   |   |   |   |    |     |    |
| Total minutes per week to all subjects.               |   |   |   |   |   |   |   |   |   |    |     |    |

3. Does the work consist of—

- (a) Systematic graded exercises?..... In what grades?.....
- (b) Individual projects selected by pupils?..... In what grades?.....
- (c) Cooperative projects selected by class?..... In what grades?.....
- (d) Projects expressive of work in history, reading, language, or other subjects?.....  
In what grades?.....

**MANUAL ARTS AND HOMEMAKING SUBJECTS.**

[Reverse of Questionnaire.]

4. Is the work in manual arts and homemaking correlated with the work in the subjects named below? State grade and subjects in form below.

**GRADES.**

|                | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | I | II | III | IV |
|----------------|---|---|---|---|---|---|---|---|---|----|-----|----|
| Drawing        |   |   |   |   |   |   |   |   |   |    |     |    |
| Language       |   |   |   |   |   |   |   |   |   |    |     |    |
| History        |   |   |   |   |   |   |   |   |   |    |     |    |
| Reading        |   |   |   |   |   |   |   |   |   |    |     |    |
| Arithmetic     |   |   |   |   |   |   |   |   |   |    |     |    |
| Other subjects |   |   |   |   |   |   |   |   |   |    |     |    |

5. What disposal is made of the finished product?

- [a] Kept by pupils?..... In what grades?.....
- [b] Becomes property of the school?..... In what grade?.....
- [c] Sold by school or pupils?..... In what grades?.....
- [d] Other methods.....

6. Underline *twice* the aim which dominates your teaching of the manual arts and home-making subjects, *once* the one which you consider of least importance.

- [a] Cultural aim. [General: nonvocational, disciplinary, etc.]
- [b] Vocational aim. [To give knowledge and skill of direct value upon immediate entrance into the trades or vocations.]
- [c] Prevocational aim. [Giving knowledge and experiences of various occupations, materials, tools, etc.]
- [d] Other aims.....

7. What percentage of pupils, after leaving school, enter directly into the vocations for which the manual arts and home-making subjects prepared them?

8. Please state as accurately as possible:

- [a] The value of the equipment of the shops and laboratories used for manual arts and home-making.....
- [b] The annual cost [last year] of supplying the manual arts and home-making courses [this includes teachers' salaries, materials, etc., but not new equipment].....  
In the elementary schools?.....  
In the high schools?.....
- [c] The total annual enrollment in manual arts and home-making courses.....  
In the elementary school.....  
In the high school.....

Give below any additional information which you may consider important.....

Responses were received from 156 superintendents, supervisors, and teachers in 39 States, furnishing usable returns from 156 city school systems. Of these cities, 13 offered no work in the manual arts and home-making subjects, leaving 143 cities reporting in full or in part on the conditions considered in the questionnaire.

The data on topics 4, 7, and 8 were so incomplete and unreliable that they are eliminated from this report.<sup>1</sup>

<sup>1</sup> The sources of error in the data are not numerous or serious, and great care has been taken in classifying and treating the returns, so that the results may be regarded as fairly reliable. It must be remembered, in interpreting the data, that the returns are for school systems and not for schools or pupils.

## AIMS.

In the preparation of manual arts or home-making courses, and in the teaching of these subjects, some aim or purpose in the mind of the superintendent or supervisor dominates the selection of materials and the choice of methods to be used. It is quite possible that the aims or purposes may be complex and not clearly differentiated, and that no one aim predominates. It is more likely, however, that there is some one aim which outweighs all others, but which does not necessarily exclude all others. The nature of the work, its distribution throughout the grades, and the methods of presenting it are very largely determined by the purposes to be accomplished. A classification of aims, then, may help to discover the trend of vocational education in so far as it concerns manual arts and home-making subjects.

In the questionnaire the aims were arbitrarily classified as cultural, vocational, and prevocational, and an explanation was attached to each of these terms. The superintendents and supervisors making reply were asked to underline once the dominant aim, and twice the one of least importance. A summary of the results is given in Table 1.

TABLE 1.—Aims as arranged by 112 superintendents, supervisors, and teachers (44 cities not reporting).

|                    | Dominant. |           | Secondary Importance. |           | Least Importance. |           |
|--------------------|-----------|-----------|-----------------------|-----------|-------------------|-----------|
|                    | Number.   | Per cent. | Number.               | Per cent. | Number.           | Per cent. |
| Cultural.....      | 44        | 39        | 25                    | 22        | 42                | 38        |
| Vocational.....    | 12        | 11        | 45                    | 40        | 55                | 49        |
| Prevocational..... | 56        | 50        | 42                    | 38        | 14                | 13        |
|                    | 112       | 100       | 112                   | 100       | 112               | 100       |

The significant fact to be gained from Table 1 is that there is no general agreement as to the aim in presenting these subjects. The prevocational aim predominates, in one-half of the schools, while the vocational aim ranks first in importance in only 11 per cent of the cities studied. There is some evidence, though not conclusive, that the present elementary and secondary schools are only incidentally vocational schools. The cultural aim ranks second as a dominant aim in a sufficient number of cities to indicate that the manual arts and homemaking subjects are still regarded largely as cultural and disciplinary subjects. Figure 1 represents graphically the reports of the 112 cities.

NATURE OF THE WORK.

The kind and variety of the work offered afford a partial indication of the extent to which the aims are being attained. If the culture aim dominates, one would expect to find wide variation in the work and the courses of long duration with more or less study and recitation accompanying the shop and laboratory work. If, on the other hand, the strictly vocational aim dominates, it would be

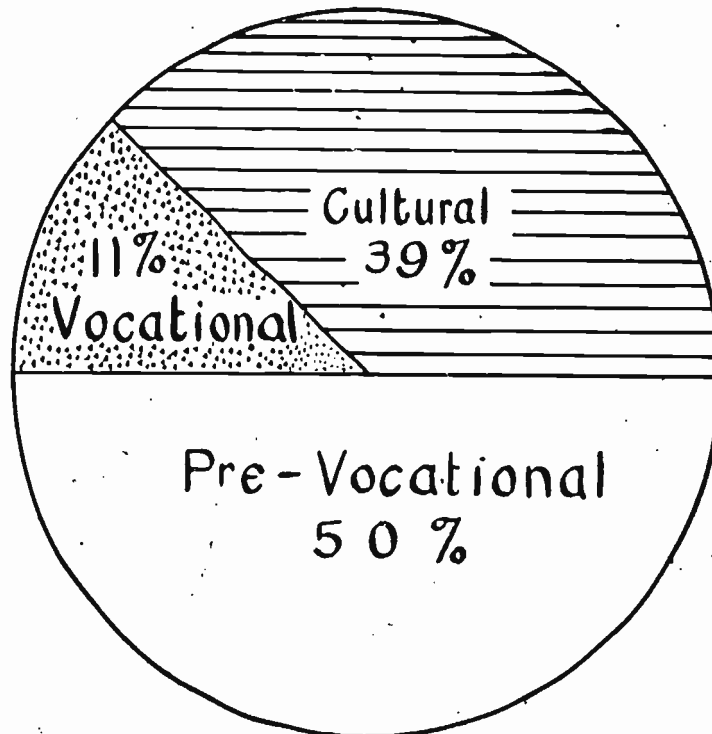


FIG. 1.—Distribution of cities as to dominant aim in manual arts and homemaking subjects, 112 cities (44 cities not reporting).

natural to find greater specialization and the greater portion of the work done in the shops and kitchens, all of it capable of application, more or less directly, in the trades and occupations. Work of a prevocational nature would possess in less degree some of the characteristics of both the cultural and vocational, but would be general in character and extensive in its scope. Some light is thrown on the nature of the work in terms of present practice by Tables 2 and 3.



TABLE 2.—Nature of work and where offered, 142 cities (14 cities not reporting).

| Kind of work.                     | Grades. |       |       |       |       |       |       |    |       |       |       |       |       |     | Total. |
|-----------------------------------|---------|-------|-------|-------|-------|-------|-------|----|-------|-------|-------|-------|-------|-----|--------|
|                                   | 1       | 2     | 3     | 4     | 5     | 6     | 7     | 8  | I     | II    | III   | IV    |       |     |        |
| Paper folding, etc.....           | 111     | 102   | 61    | 38    | 16    | 10    | 8     | 8  | ..... | ..... | ..... | ..... | ..... | 354 |        |
| Cardboard construction.....       | 33      | 47    | 62    | 59    | 39    | 18    | 13    | 15 | 2     | 2     | 1     | 1     | ..... | 292 |        |
| Raffia, basketry.....             | 23      | 27    | 38    | 51    | 44    | 31    | 12    | 12 | 4     | 1     | 2     | 3     | ..... | 248 |        |
| Weaving, textiles.....            | 32      | 38    | 40    | 25    | 13    | 7     | 4     | 5  | 3     | 4     | 4     | 4     | ..... | 179 |        |
| Knife, coping saw.....            | 2       | 2     | 4     | 8     | 30    | 28    | 14    | 12 | 1     | ..... | ..... | ..... | ..... | 104 |        |
| Clay, plastics.....               | 38      | 32    | 19    | 12    | 7     | 8     | 4     | 6  | 4     | 3     | 3     | 2     | ..... | 138 |        |
| Leather, stamp, etc.....          | .....   | ..... | ..... | 1     | 1     | 1     | 4     | 8  | 18    | 15    | 13    | 9     | ..... | 70  |        |
| Art metal work.....               | .....   | ..... | ..... | ..... | 2     | 3     | 1     | 6  | 12    | 9     | 13    | 11    | ..... | 57  |        |
| Jewelry.....                      | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 8     | 5     | 6     | 9     | ..... | 29  |        |
| Printing, bookbinding.....        | .....   | ..... | 2     | 3     | 6     | 9     | 18    | 14 | 11    | 10    | 9     | 7     | ..... | 84  |        |
| Joinery, cabinetmaking.....       | .....   | ..... | ..... | ..... | 12    | 53    | 93    | 98 | 91    | 86    | 33    | 32    | ..... | 468 |        |
| Wood turning, pattern making..... | .....   | ..... | ..... | ..... | ..... | 2     | 7     | 18 | 38    | 67    | 32    | 36    | ..... | 190 |        |
| Foundry.....                      | .....   | ..... | ..... | ..... | ..... | 1     | 1     | 2  | 4     | 10    | 11    | 7     | ..... | 36  |        |
| Machine shop.....                 | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 2  | 4     | 7     | 22    | 24    | ..... | 59  |        |
| Forge shop.....                   | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 7     | 13    | 16    | 6     | ..... | 43  |        |
| Concrete construction.....        | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 6  | 4     | 4     | 1     | ..... | ..... | 23  |        |
| Cooking.....                      | .....   | ..... | ..... | 1     | 6     | 24    | 62    | 91 | 88    | 68    | 43    | 39    | ..... | 422 |        |
| Sewing.....                       | 1       | 1     | 4     | 18    | 56    | 84    | 94    | 78 | 82    | 71    | 44    | 36    | ..... | 566 |        |
| Milinery.....                     | .....   | ..... | ..... | ..... | 1     | 1     | 1     | 3  | 16    | 14    | 27    | 19    | ..... | 32  |        |

The figures in Table 2 represent cities offering the stated kinds of work in each of the grades and in the high school. The totals represent the sum of all the courses offered in any kind of work in all grades and in all cities.

In order to make the figures for each grade comparable with those of other grades, there must be a common base. The total number of cities reporting (142) was used as the base for computing the percentages given in Table 3. Each per cent was computed to the nearest whole number.

TABLE 3.—Figures of Table 2 reduced to percentages, based on 142 cities.

| Kinds of work.                    | Grades. |       |       |       |       |       |       |    |       |       |       |       |       |  |
|-----------------------------------|---------|-------|-------|-------|-------|-------|-------|----|-------|-------|-------|-------|-------|--|
|                                   | 1       | 2     | 3     | 4     | 5     | 6     | 7     | 8  | I     | II    | III   | IV    |       |  |
| Paper folding, etc.....           | 78      | 72    | 43    | 27    | 11    | 7     | 6     | 6  | ..... | ..... | ..... | ..... | ..... |  |
| Cardboard construction.....       | 23      | 33    | 44    | 42    | 27    | 13    | 9     | 11 | 1     | 1     | 1     | 1     | ..... |  |
| Raffia, basketry.....             | 16      | 19    | 27    | 36    | 31    | 22    | 8     | 8  | 3     | 1     | 1     | 1     | ..... |  |
| Weaving, textiles.....            | 23      | 27    | 28    | 18    | 9     | 5     | 3     | 4  | 2     | 3     | 3     | 3     | ..... |  |
| Knife, coping saw.....            | 1       | 1     | 3     | 6     | 21    | 20    | 10    | 8  | 1     | ..... | ..... | ..... | ..... |  |
| Clay, plastics.....               | 27      | 23    | 13    | 8     | 5     | 6     | 3     | 4  | 3     | 2     | 2     | 2     | ..... |  |
| Leather, stamp, etc.....          | .....   | ..... | ..... | 1     | 1     | 1     | 3     | 6  | 13    | 11    | 9     | 9     | ..... |  |
| Art metal work.....               | .....   | ..... | ..... | ..... | 1     | 2     | 1     | 4  | 8     | 6     | 6     | 6     | ..... |  |
| Jewelry.....                      | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 6     | 4     | 4     | 4     | ..... |  |
| Printing, bookbinding.....        | .....   | ..... | ..... | 1     | 2     | 4     | 6     | 9  | 10    | 8     | 7     | 8     | ..... |  |
| Joinery, cabinetmaking.....       | .....   | ..... | ..... | ..... | 8     | 37    | 65    | 69 | 64    | 40    | 23    | 23    | ..... |  |
| Wood turning, pattern making..... | .....   | ..... | ..... | ..... | ..... | 1     | 3     | 13 | 27    | 47    | 23    | 18    | ..... |  |
| Foundry.....                      | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 3     | 7     | 8     | 5     | ..... |  |
| Machine shop.....                 | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 3     | 5     | 15    | 16    | ..... |  |
| Forge shop.....                   | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 1  | 3     | 3     | 1     | 1     | ..... |  |
| Concrete construction.....        | .....   | ..... | ..... | ..... | ..... | ..... | ..... | 4  | 3     | 3     | 1     | ..... | ..... |  |
| Cooking.....                      | .....   | ..... | ..... | 1     | 4     | 16    | 44    | 64 | 62    | 45    | 30    | 27    | ..... |  |
| Sewing.....                       | .....   | ..... | ..... | 1     | 3     | 13    | 40    | 69 | 66    | 55    | 50    | 31    | ..... |  |
| Milinery.....                     | .....   | ..... | ..... | ..... | ..... | 1     | 1     | 1  | 3     | 11    | 10    | 19    | ..... |  |

The variety in the kinds of work offered is an important fact to be gained from the tables. The fact that there are five kinds of work found in every grade and in the high school should also be noted.

Table 3 shows how the emphasis varies from grade to grade for the various lines of work. These facts are represented more clearly in figure 2.

From Tables 2 and 3 and from figure 2 the following general facts may be gained:

1. Many different kinds of work are given in the different grades, but those receiving the most attention are sewing, joinery and cabinetmaking, cooking, paper folding, cutting, etc., cardboard construction, and raffia and basketry.
2. The following kinds of work are offered in every grade and throughout the high school: Cardboard construction, raffia and basketry, weaving and textiles, clay, plasticine, etc., and sewing. These subjects are not given equal emphasis in each of the grades, however.
3. Paper folding, cutting, etc., joinery and cabinetmaking, cooking and sewing are the only kinds of work given in over 50 per cent of the cities reporting.

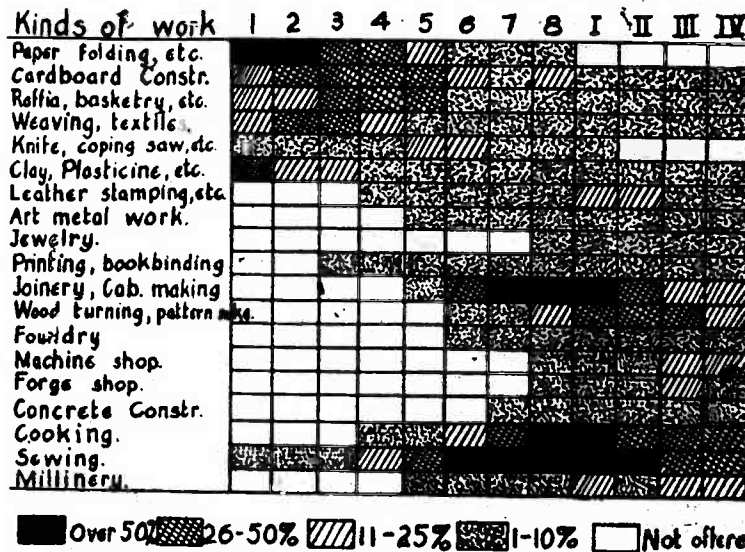


FIG. 2.—Percentage of cities offering work in different grades, 143 cities.

4. Grade eight is not only the grade in which the greatest emphasis is placed on manual arts and homemaking subjects, but it is the only grade in which every kind of work in these subjects is offered. The first high-school year ranks second in amount of emphasis and in variety of work.

5. The kinds of work receiving the least amount of attention are: Art metal, jewelry, printing and bookbinding, foundry, and concrete construction.

6. If the sanction of present practice be accepted, the following kinds of work are approved in—

*Grades 1 to 5.*—Paper, cardboard, raffia and reed, weaving textiles, clay and plasticine, and sewing.

*Grades 6 to 8.*—Knife and coping saw, joinery and cabinetmaking, cooking and sewing.

*Grades I and II.*—Leather stamping, etc., joinery and cabinetmaking, wood turning and pattern making, cooking and sewing.

*Grades III and IV.*—Machine shop, forge shop, cooking, sewing, and millinery.

In a general way these deductions should be of value to superintendents and supervisors who contemplate introducing the manual arts and homemaking subjects into their courses of study. To such persons the figures of Table 3 may serve as standards for the selection of material for courses of study and for the proper distribution of that material throughout the grades and the high school.

No attempt has been made to analyze the kinds of work reported. The details vary greatly in different localities. Even though designated by the same name in all the grades, there may be great variation in kind and amount of work done in the same subject in the different grades. Certainly the work with clay in the first grade differs much in character from work with the same material in the last year of the high school. A similar adaptation to the age and needs of pupils may be found in the other subjects. These details of variation can not be shown except in the general way indicated in the tables and figures.

#### TIME GIVEN TO THESE SUBJECTS.

It is generally conceded that when the work in the manual arts and homemaking courses is not correlated with other subjects it is better to have longer periods, even though fewer in number, than to have several short periods per week. The number of periods per week varies in different cities, and according to grades. In several cities the time is not distributed by periods in grades below the fifth. The work in manual arts and homemaking courses in these cities is taught incidentally and correlated with other subjects. The distribution of cities on the basis of the number of periods per week given to manual arts and homemaking subjects is shown in Table 4 for 56 cities.

TABLE 4.—Number of periods per week, 56 cities (100 cities not reporting).

| Periods per week.  | Grades. |    |    |    |    |    |    |    |    |    |     |    |  |     | Total. |
|--------------------|---------|----|----|----|----|----|----|----|----|----|-----|----|--|-----|--------|
|                    | 1       | 2  | 3  | 4  | 5  | 6  | 7  | 8  | I  | II | III | IV |  |     |        |
| Undistributed..... | 6       | 6  | 5  | 4  | 1  | 1  |    |    |    |    |     |    |  | 23  |        |
| 1.....             | 7       | 8  | 11 | 12 | 19 | 27 | 28 | 26 | 5  | 3  | 1   | 1  |  | 148 |        |
| 2.....             | 3       | 3  | 4  | 7  | 8  | 11 | 13 | 14 | 9  | 7  | 5   | 5  |  | 89  |        |
| 3.....             | 4       | 3  | 3  | 4  | 2  |    | 1  | 4  | 3  | 2  |     |    |  | 26  |        |
| 4.....             | 1       | 1  |    | 1  | 2  | 3  | 3  | 3  | 3  | 3  | 4   | 4  |  | 27  |        |
| 5.....             | 7       | 7  | 5  | 1  | 2  | 1  | 1  | 1  | 14 | 12 | 12  | 12 |  | 75  |        |
| 6 or over.....     |         |    |    | 1  | 1  | 1  | 2  | 3  | 6  | 6  | 9   | 8  |  | 42  |        |
| Total.....         | 28      | 28 | 28 | 30 | 35 | 44 | 48 | 51 | 42 | 33 | 31  | 30 |  | 430 |        |
| Median.....        | 2       | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 5  | 5  | 5   | 5  |  | 2   |        |

The median number of periods per week indicates the tendency to have fewer periods in the grades and a larger number in the high school.

Before the number of periods per week can have much significance, it is necessary to know something of the length of the periods. Table 5 represents the distribution of cities according to the total number of minutes per week given to the manual arts and homemaking subjects in 125 cities.

TABLE 5.—Distribution of cities with reference to number of minutes per week given to manual arts and home-making subjects, 125 cities (31 cities not reporting).

| Minutes per week.   | Grades. |    |    |    |    |     |     |     |     |     |     |     |   |  | Total. |
|---------------------|---------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|---|--|--------|
|                     | 1       | 2  | 3  | 4  | 5  | 6   | 7   | 8   | I   | II  | III | IV  |   |  |        |
| Less than 45.....   | 12      | 10 | 11 | 8  | 5  | 3   |     |     |     |     |     |     |   |  | 49     |
| 46 to 60.....       | 9       | 10 | 8  | 10 | 14 | 6   | 3   |     | 3   | 2   | 3   | 1   |   |  | 67     |
| 61 to 75.....       | 20      | 19 | 24 | 25 | 31 | 35  | 18  | 12  | 1   | 1   | 1   | 1   | 1 |  | 128    |
| 76 to 100.....      | 10      | 10 | 10 | 13 | 24 | 41  | 57  | 58  | 19  | 14  | 11  | 11  |   |  | 278    |
| 101 to 125.....     | 7       | 9  | 9  | 10 | 9  | 11  | 17  | 17  | 4   | 6   | 3   | 2   |   |  | 108    |
| 126 to 150.....     |         |    | 1  |    | 1  |     | 2   | 4   | 1   | 1   | 1   | 1   |   |  | 12     |
| 151 to 180.....     | 3       | 3  | 1  | 1  | 1  | 2   | 5   | 6   | 2   | 1   | 3   | 3   |   |  | 31     |
| 181 to 200.....     |         |    |    |    | 1  | 4   | 10  | 11  | 2   | 2   | 1   | 1   |   |  | 32     |
| 201 to 300.....     | 1       | 1  | 1  |    |    |     | 1   | 2   | 14  | 13  | 12  | 10  |   |  | 58     |
| 301 to 400.....     |         |    |    |    |    |     | 2   | 2   | 9   | 9   | 8   | 7   |   |  | 37     |
| 401 to 450.....     |         |    |    | 1  | 1  |     |     |     | 11  | 10  | 8   | 9   |   |  | 40     |
| 451 to 500.....     |         |    |    |    | 1  | 1   | 1   | 2   | 23  | 22  | 19  | 19  |   |  | 88     |
| 501 to 600.....     |         |    |    |    |    |     |     |     | 4   | 3   | 2   | 2   |   |  | 11     |
| Over 600.....       |         |    |    |    |    |     |     |     | 3   | 3   | 3   | 2   |   |  | 11     |
| Total.....          | 63      | 62 | 65 | 68 | 83 | 103 | 118 | 114 | 95  | 87  | 73  | 69  |   |  | 1,008  |
| Lower quartile..... | 53      | 54 | 57 | 60 | 69 | 69  | 79  | 83  | 114 | 122 | 161 | 161 |   |  | 73     |
| Median.....         | 69      | 70 | 70 | 71 | 74 | 81  | 83  | 95  | 114 | 122 | 161 | 161 |   |  | 94     |
| Upper quartile..... | 91      | 96 | 91 | 94 | 93 | 97  | 117 | 124 | 144 | 168 | 168 | 168 |   |  | 190    |

This table should be read: Of the cities giving less than 45 minutes per week to the manual arts and home-making subjects, there are 12 in the first grade, 10 in the second grade, etc. In the first grade the middle 50 per cent of the cities give from 53 to 91 minutes per week to these subjects, the median being 69 minutes; in grade 2, from 54 to 96 minutes, with the median at 70, etc.

Figure 3 shows graphically the median amount of time given to the manual arts and home-making subjects, as well as the limits between which the middle 50 per cent of the cities fall. The extremes above and below the middle 50 per cent are not shown in this figure, but may be found by referring to Table 5.

The heavy vertical lines represent the time given in the middle 50 per cent of the cities reporting. The short horizontal lines represent the median number of minutes in these cities. The gradual rise in the median line after the fourth grade and the very abrupt rise after the eighth grade are significant. It must not be forgotten that in 25 per cent of the cities the time is greater than that represented by the black lines, and in 25 per cent of the cities it is less than here represented.

It is evident from Table 5 and figure 3 that there is great diversity in the amount of time given to these subjects. The number of minutes per week ranges from less than 45 to over 600. The limits

of the middle 50 per cent, however, probably include those cities in which the number of minutes per week represents standard practice.

Given the number of periods per week and the total number of weekly minutes devoted to the manual arts and home-making subjects, it is still necessary to know what relation this time bears to the total school time. This can only be known by comparing the time given to these subjects with that given to all the school subjects.

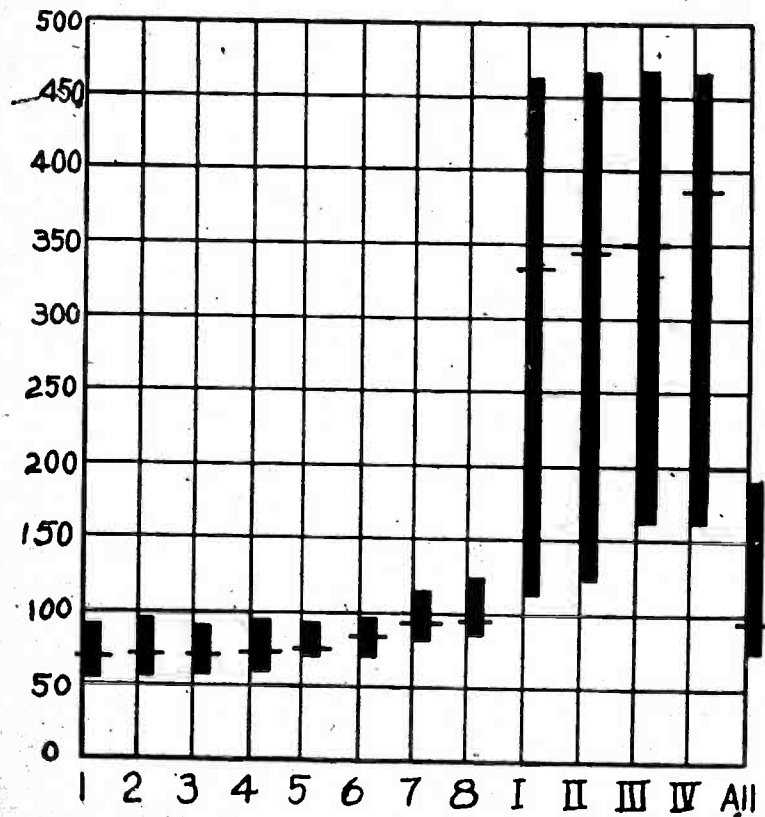


FIG. 2.—Median and middle 50 per cent of cities with reference to number of minutes per week given to manual arts and home-making subjects, 126 cities. Short horizontal bars represent medians; heavy vertical bars represent middle 50 per cent of cities.

The distribution of the 66 cities reporting with reference to the total school time is given in Table 6. The term "total school time" is here used to indicate the number of minutes per week that school is actually in session and does not include the time given to recesses and the noon intermission. It represents the number of minutes per week of actual schooling that a child may get provided he is in attendance at school for the entire week.

TABLE 6.—Distribution of cities with reference to the total number of minutes per week given to all school subjects, exclusive of recesses and noon intermissions, 66 cities (90 cities not reporting).

| Minutes per week.    | Grades. |       |       |       |       |       |       |       |       |       |       |       |       | Total |
|----------------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                      | 1       | 2     | 3     | 4     | 5     | 6     | 7     | 8     | I     | II    | III   | IV    |       |       |
| Less than 1,000..... | 8       | 2     | 1     | 1     | 1     | 1     | 2     | 2     | 1     | 1     | 1     | 1     | 22    |       |
| 1,001 to 1,100.....  | 1       |       |       |       |       | 1     | 1     | 1     | 1     | 1     |       |       | 6     |       |
| 1,101 to 1,200.....  |         |       | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     |       |       | 10    |       |
| 1,201 to 1,250.....  | 6       | 2     | 1     |       |       |       |       |       |       |       |       |       | 9     |       |
| 1,251 to 1,350.....  | 7       | 8     | 3     | 2     | 2     | 3     | 3     | 3     | 1     | 2     | 2     | 2     | 24    |       |
| 1,351 to 1,400.....  | 10      | 10    | 6     | 3     | 2     | 2     | 3     | 3     | 1     | 1     |       |       | 34    |       |
| 1,401 to 1,450.....  | 2       | 3     | 2     | 4     | 6     | 6     | 6     | 5     | 3     | 3     | 2     | 2     | 37    |       |
| 1,451 to 1,500.....  |         | 2     | 4     | 3     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 17    |       |
| 1,501 to 1,600.....  | 12      | 15    | 21    | 22    | 23    | 26    | 22    | 28    | 9     | 18    | 16    | 15    | 236   |       |
| 1,601 to 1,800.....  |         |       | 5     | 10    | 12    | 13    | 14    | 11    | 8     | 8     | 8     | 8     | 97    |       |
| Over 1,800.....      |         |       |       | 1     | 1     | 3     | 3     | 4     | 6     | 8     | 9     | 8     | 46    |       |
| Total.....           | 46      | 42    | 44    | 47    | 50    | 57    | 56    | 59    | 49    | 47    | 40    | 39    | 567   |       |
| Lower quartile.....  | 1,217   | 1,325 | 1,392 | 1,468 | 1,450 | 1,500 | 1,442 | 1,475 | 1,458 | 1,472 | 1,513 | 1,520 | 1,410 |       |
| Median.....          | 1,355   | 1,395 | 1,520 | 1,543 | 1,550 | 1,554 | 1,550 | 1,550 | 1,558 | 1,550 | 1,580 | 1,547 | 1,539 |       |
| Upper quartile.....  | 1,508   | 1,528 | 1,575 | 1,592 | 1,600 | 1,631 | 1,630 | 1,609 | 1,675 | 1,725 | 1,775 | 1,775 | 1,697 |       |

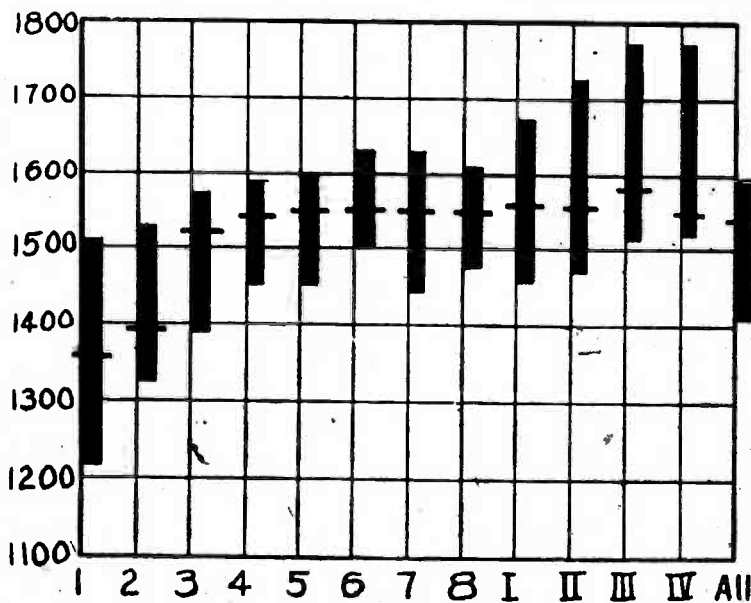


FIG. 4.—Median and middle 50 per cent of cities with reference to total number of minutes per week given to all subjects, 66 cities. Short horizontal bars represent medians; heavy vertical bars represent middle 50 per cent of cities.

The total school time varies greatly, the range being from less than 1,000 minutes per week to over 1,800 minutes per week. The limits for the middle 50 per cent of cities and the medians can best be represented graphically. Figure 4 shows these facts.

It will be noted from Table 6 and figure 4 that the total school time increases rapidly up to the third grade and that thereafter the

increase is very slight. The greatest amount of time is given to the subjects in the third year of the high school.

The figures of Table 6 were used as the base in computing the percentages given in Table 7, which shows the relation the manual arts and homemaking time bears to the total school time. This table does not show the total distribution, but only the median percentages with the upper and lower limits of the middle 50 per cent of the cities reporting.

TABLE 7.—Percentage that the time given to manual arts and homemaking subjects is of the total school time.<sup>1</sup>

|                     | Grades. |     |     |     |     |     |     |     |      |      |      |      | Total. |
|---------------------|---------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|--------|
|                     | 1       | 2   | 3   | 4   | 5   | 6   | 7   | 8   | I    | II   | III  | IV   |        |
| Lower quartile..... | 4.4     | 4.1 | 4.1 | 4.1 | 4.7 | 4.6 | 5.5 | 5.6 | 7.8  | 8.0  | 10.6 | 10.6 | 5.1    |
| Median.....         | 5.1     | 5.0 | 4.7 | 4.6 | 4.8 | 5.2 | 6.0 | 6.1 | 21.4 | 22.2 | 23.1 | 24.9 | 6.1    |
| Upper quartile..... | 6.0     | 6.3 | 6.8 | 5.9 | 5.8 | 6.0 | 7.1 | 7.7 | 27.7 | 27.0 | 27.0 | 26.3 | 12.1   |

<sup>1</sup>In terms of medians and quartiles.

The figures of the above table are represented graphically in figure 5.

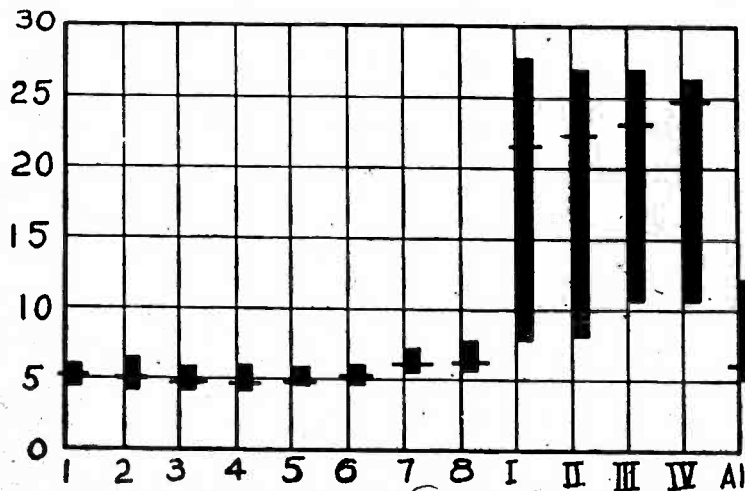


FIG. 5.—Median and middle 50 per cent of percentages of total school time given to manual arts, etc. Short horizontal bars represent medians, heavy vertical bars represent middle 50 per cent of cities.

Short horizontal bars represent medians, heavy vertical bars represent middle 50 per cent of cities.

From Table 7 and figure 5 it is evident that there is wide variation in the proportionate amount of time given to these subjects, especially in the high school. Only about 5 per cent of the total school time is thus used in the first six grades. This increases to 6 per

cent in the seventh and eighth grades and to nearly one-fourth of all school time by the time the senior year of high school is reached.

The relative amount of time given to a subject is one indication of the educational value that is attributed to that subject. It will be seen that the proportion of time is about 1 to 20 in the grades and 1 to 4 in the high school. Is the work in the high school five times as valuable as that in the grades? In terms of present practice, as measured by the amount of time given to it, it is.

Relative to the time given to manual arts and homemaking subjects the data here presented justify the following conclusions:

1. The number of periods per week devoted to these subjects is one in the grades and five in the high school.
2. The time given to work of this kind amounts to about one and one-quarter hours per week in grades 1 to 5; one and one-half hours in grades 6 to 8; and nearly six hours per week in the high school.
3. The total school time varies greatly, but the median total time is 1,350 minutes in grade 1, 1,400 in grade 2, and about 1,550 minutes per week in all the other grades.
4. The time given to the manual arts and homemaking subjects is about 5 per cent of the total school time in the first six grades; about 6 per cent in the seventh and eighth grades, and nearly 25 per cent in the high school.

#### METHODS EMPLOYED.

The methods of presenting the work in manual arts and homemaking subjects and the nature of the work presented may be classified in general into four more or less distinct classes or groups—systematic, graded exercises; individual projects selected by the pupils; cooperative projects selected by the class; and projects expressive of the regular work in history, arithmetic, reading, and other subjects. It will be seen that several of these may be employed in one school in different grades; hence in actual practice there is a certain amount of overlapping of these methods. There is also a tendency to make use of the method adapted to the needs of children at various stages in their development, so that some of these methods are emphasized in a few grades and found scarcely at all in others.

Since the methods were classified in this way in the questionnaire, a brief explanation of each method is here given:

The *systematic graded exercise* plan is based largely on the Swedish sloyd, or some other system, in which the work is given with special reference to the sequence of the projects, tools, technical processes, construction, and finish. The chief aims are to develop skill and to make useful projects. Little attention is given to the interests of the pupils in those exercises. Exercise 6, or its equivalent, must be completed before exercise 7 is begun. Under this plan interest is maintained by the development of skill, by general interest in the use of tools and shaping materials, and by the desire to reach exer-



cise 12, which may be the particular objective point in the course at that time.

*Individual projects selected by the pupils* have the advantage of making a direct appeal to the immediate interests of the pupils. Pupils, however, are apt to select projects that are beyond their capabilities, and because of this fact they may be disappointed in the finished project. This method presents many difficulties to the instructor, because in a class of 20 pupils there may be as many as 20 different projects under construction at one time. This plan seems to work successfully with mature pupils in the upper grades. When used alone, this plan sacrifices skill and well-finished products in order to secure temporary interest in a given project.

*Cooperative projects selected by the pupils* are designed to make an appeal to the group or cooperative instincts of the pupils. Frequently such projects are institutional projects, and if they are large jobs, interest is usually good. Boys will build boats, buildings, concrete walks, but interest lags when they are required to frame pictures, repair furniture, or construct some article of school equipment.

*The making of projects expressive of some phase of subject matter* in history, arithmetic, geography, or other subjects involves rather close correlation of manual arts and homemaking subjects with the regular school work in other subjects. This method makes the handwork incidental to the bookwork, and is merely a means of concrete expression of some of the ideas gained in the study of other phases of subject matter. When proper correlation exists the handwork may be made a strong incentive for better work in the other subjects.

Table 8 shows the prevalence of each method when used alone, also when used in combination with some other method.

TABLE 8.—*Methods used in presenting manual arts and homemaking subjects, 131 cities (25 cities not reporting).*

|  | Cities. |
|--|---------|
| A. Systematic graded exercises, and individual projects only.....                | 30      |
| B. Systematic exercises, individual projects, and cooperative projects only..... | 26      |
| C. All four methods.....   | 28      |
| D. Systematic graded exercises only.....   | 22      |
| E. Systematic exercises, individual projects, and correlated projects.....       | 10      |
| F. Systematic exercises and projects expressive of other work only.....          | 6       |
| G. Individual projects, cooperative projects, and correlated projects.....       | 3       |
| H. Individual projects only.....   | 2       |
| I. Systematic exercises, cooperative projects, and correlated projects.....      | 1       |
| Cities reporting.....  | 131     |

The single method in greatest favor among the cities reporting is that of the systematic graded exercises. This method combined with that of individual projects find greatest favor of all. These

two methods combined with the cooperative project plan ranks second in importance, while a combination of all four methods ranks third. The figures of Table 8 above, when reduced to percentages, are represented graphically in figure 6.

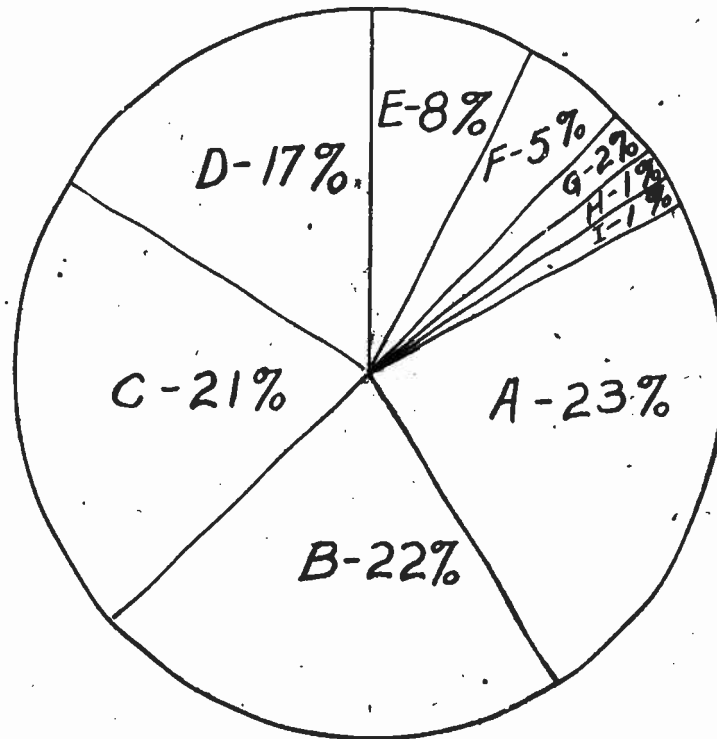


FIG. 6.—Methods used in presenting manual arts and homemaking subjects.

- A. Systematic graded exercises, and individual projects only.
- B. Systematic exercises, individual projects, and cooperative projects.
- C. All four methods.
- D. Systematic graded exercises only.
- E. Systematic exercises, individual projects, and correlated projects.
- F. Systematic exercises and projects expressive of other work only.
- G. Individual projects, cooperative projects, and correlated projects.
- H. Individual projects only.
- I. Systematic exercises, cooperative projects, and correlated projects.

TABLE 9.—Methods used in 151 cities, showing grades in which each is emphasized.

|                                   | Grade. |    |    |    |    |    |     |     |    |    |     |    |
|-----------------------------------|--------|----|----|----|----|----|-----|-----|----|----|-----|----|
|                                   | I      | 2  | 3  | 4  | 5  | 6  | 7   | 8   | I  | II | III | IV |
| Systematic, graded exercises..... | 73     | 70 | 70 | 76 | 87 | 99 | 105 | 104 | 80 | 71 | 64  | 63 |
| Individual projects.....          | 26     | 26 | 23 | 29 | 29 | 45 | 64  | 77  | 66 | 65 | 60  | 53 |
| Cooperative projects.....         | 22     | 21 | 22 | 22 | 25 | 26 | 25  | 25  | 29 | 29 | 40  | 29 |
| Correlated projects.....          | 37     | 37 | 37 | 35 | 37 | 37 | 26  | 29  | 18 | 17 | 16  | 16 |

The figures in Table 9 represent the number of cities using the method specified in each of the grades. The data of this table reduced to percentages are represented graphically in figure 7.

Regarding the methods of presenting the manual arts and homemaking subjects, the following general facts may be stated:

1. When any method is used alone, that of systematic, graded exercises leads all the rest, but combinations of two or more methods are more frequent than any one method used alone.

2. While each method is in use to some extent in every grade, that of systematic, graded exercises is most frequent in grades 6, 7, and 8; that of individual projects in grades 8, I, and II; that of cooperative projects in grades 7, 8, and through the high school; and that of projects expressive of work in history, geography, arithmetic, etc., in grades 1 to 4.

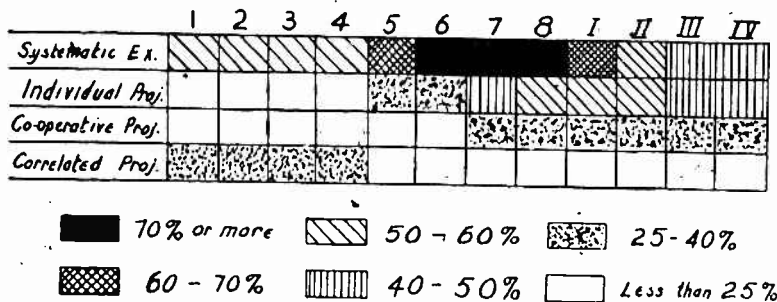


FIG. 7.—Methods used in different grades.

#### DISPOSAL OF PRODUCTS.

The method of disposing of the finished products of the manual arts and homemaking work depends somewhat upon the nature of the products. Obviously some of the products of the shop and kitchen have little or no market value, hence disposal by sale is not possible. Sometimes the materials are furnished by the school and used only as a means of training the pupils in the handling of tools and implements; in this case the products are retained by the school. In most cases, however, the pupils keep the products of their labor. Cooperative projects are likely to be of such a nature that the finished products are kept by the school. There are also combinations of the above methods and adaptations of each to the grade in which the work is done, to the nature of the product, and to the local demands for the output of the shops and kitchens. The methods of disposing of the products in the various cities are classified in Table 12.

TABLE 12.—Methods of disposing of products, 130 cities (26 cities not reporting).

|  | Cities. |
|--|---------|
| Kept by pupils.....                                      | 52      |
| Part kept by pupils, part by school.....                 | 46      |
| Part kept by pupils, part by school, part sold.....      | 19      |
| Part kept by pupils, part sold.....                      | 11      |
| Given for charity, and exchanged with other schools..... | 2       |
| Total.....   | 130     |

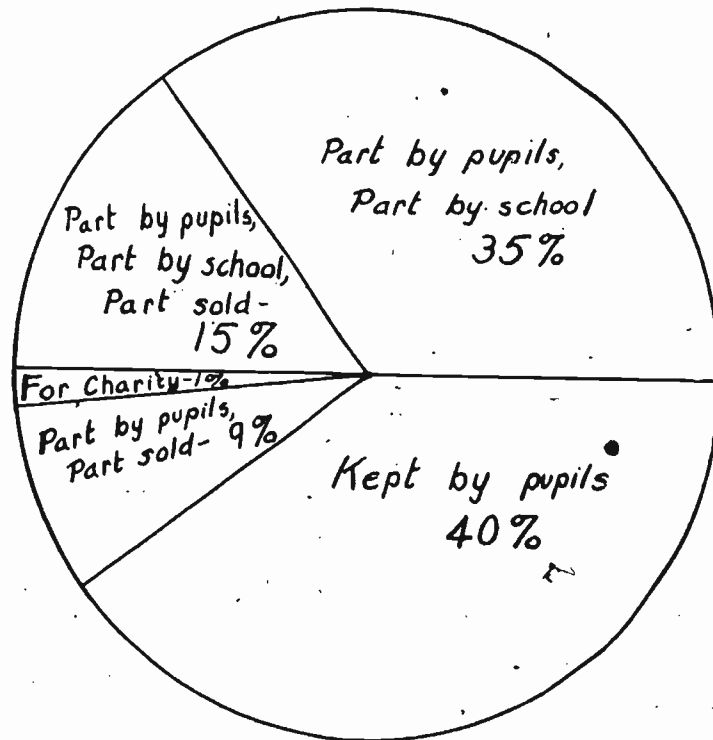


FIG. 8.—Methods of disposal of finished products.

The methods of disposal used in the different cities, grade by grade, are shown in Table 13.

TABLE 13.—Number of cities using each method, grade by grade.

| Methods of disposal.          | Grades. |    |    |     |     |     |     |     |     |     |     |    |
|-------------------------------|---------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|
|                               | 1       | 2  | 3  | 4   | 5   | 6   | 7   | 8   | I   | II  | III | IV |
| Kept by pupils.....           | 99      | 99 | 99 | 102 | 107 | 113 | 123 | 125 | 103 | 100 | 94  | 98 |
| Kept by school.....           | 29      | 29 | 26 | 26  | 31  | 33  | 44  | 46  | 54  | 53  | 47  | 45 |
| Sold by school or pupils..... | 10      | 10 | 10 | 10  | 11  | 13  | 17  | 19  | 14  | 13  | 11  | 19 |

It will be noted that the method most commonly used is that of permitting the pupil to retain his project when completed. The combination nearly as popular is that of allowing part of the product to be kept by the pupil and the remainder by the school. Retention

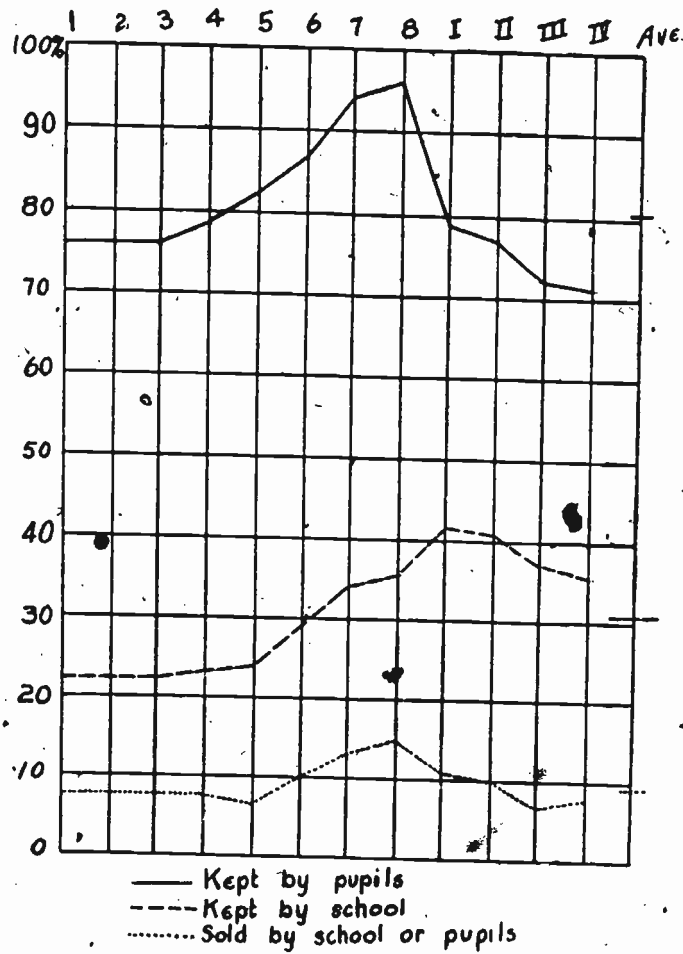


FIG. 9.—Methods of disposal of finished products by grades.

of products by pupils is found in the largest number of cities in the seventh and eighth grades. Retention by the school is most frequent in the first and second years of the high school, while disposal by sale is most frequent in grades seven and eight. Figure 9 shows in percentages the frequency of the use of each of these methods.

## GENERAL SUMMARY.

In terms of the central tendencies represented by the data presented in the foregoing sections it is possible to state certain standards of practice in the teaching of manual arts and home-making subjects.

The dominant aim is prevocational in character. This means that the courses given are intended to give knowledge of and a low degree of facility in the use of tools, materials, and processes, some attention being given those phases of the work which have probability of usefulness in the arts and trades. It also implies that the work will be varied, covering as wide a range of tools, materials, and processes as possible in the time available.

There is great variety in the kinds of work offered, but the general tendency seems to lie in the direction of the following—work in paper in the primary grades, joinery and cabinet making for boys in the grammar grades, and sewing and cooking for girls in the grammar grades. These are also the lines of work receiving the greatest emphasis.

The time given to these subjects amounts to about 75 minutes per week in the lower grades, 90 minutes per week in the seventh and eighth grades, and over 300 minutes per week in the high school. This time is undistributed in the primary grades, is given in a single weekly period in the grammar grades, and in five weekly periods in the high school. The time given to these subjects is over 5 per cent of the total school time in the elementary school and over 25 per cent of the total time in the high school.

Although various methods of presenting the work are in use, that of systematic graded exercises is the one most frequently used. The type of method used varies somewhat with the grade in which the work is given, as well as with the aim dominating the teaching of these subjects.

The methods of disposing of the finished products are varied according to the nature of the product and according to the grade in which produced, but the one in most frequent use is that of permitting the pupil to keep the product of his handiwork.

The central tendencies obtained from a treatment of the data in this bulletin may be accepted as representative of the present status of the manual arts and home-making subjects in so far as they apply to the phases of the subjects studied and to the extent of the 156 cities reporting. The variations from these central tendencies, however, may be quite as important as the central tendencies themselves in determining future policies and reorganizations.

*Cities and States represented in this study.*

|  |  |   |
|--|--|---|
| <b>Alabama:</b><br>Selma.  | <b>Iowa—Continued.</b><br>Sioux City.<br>Waterloo.   | <b>New Jersey:</b><br>Bayonne.<br>East Orange.<br>Elizabeth.<br>Jersey City.<br>Kearney.<br>North Bergen.<br>Rahway.<br>Rutherford.<br>Trenton.<br>Plainfield.  |
| <b>California:</b><br>Alameda.<br>Bakersfield.<br>Berkeley.<br>Los Angeles.<br>Pasadena.<br>San Jose.  | <b>Kansas:</b><br>Emporia.<br>Kansas City.<br>Leavenworth.<br>Newton.<br>Parsons.<br>Topeka. | <b>New Mexico:</b><br>Albuquerque.  |
| <b>Connecticut:</b><br>Ansonia.<br>Danbury.<br>Meriden.<br>Waterbury.  | <b>Kentucky:</b><br>Bowling Green.<br>Frankfort.<br>Lexington.<br>Winchester.                | <b>New York:</b><br>Cohoes.<br>Dunkirk.<br>Fulton.<br>Gloversville.<br>Harwell.<br>Hudson Falls.<br>Ithaca.<br>Jamestown.<br>Kingston.<br>Newburgh.<br>Oswego.<br>Plattsburg.<br>Rome.<br>Syracuse.<br>Utica.<br>Yonkers. |
| <b>Colorado:</b><br>Grand Junction.<br>Greeley.<br>Trinidad.   | <b>Louisiana:</b><br>Baton Rouge.<br>New Orleans.  | <b>North Carolina:</b><br>Charlotte.  |
| <b>Georgia:</b><br>Athens.   | <b>Maine:</b><br>Sanford.  | <b>North Dakota:</b><br>Bismarck.<br>Fargo.   |
| <b>Idaho:</b><br>Idaho Falls.  | <b>Massachusetts:</b><br>Chelsea.<br>Everett.<br>Milford.<br>Springfield.<br>Waltham.        | <b>Ohio:</b><br>Akron.<br>Canton.<br>Cincinnati.<br>Elyria.<br>Hamilton.<br>Lancaster.<br>Norwood.<br>Youngstown.   |
| <b>Illinois:</b><br>Beardstown.<br>Chicago Heights.<br>Elgin.<br>Freeport.<br>Hinckley.<br>Hoopestown.<br>Joliet.<br>Metropolis.<br>Ottawa.<br>Peoria.<br>Quincy.<br>East St. Louis. | <b>Michigan:</b><br>Adrian.<br>Benton Harbor.<br>Calumet.<br>Detroit.<br>Muskegon.           | <b>Oklahoma:</b><br>Bartlesville.<br>Chickasha.   |
| <b>Indiana:</b><br>Crawfordsville.<br>Indianapolis.<br>Marion.<br>Michigan City.<br>Muncie.<br>Oakland City.<br>Peru.<br>South Bend.<br>Vincennes.                                   | <b>Minnesota:</b><br>Minneapolis.  | <b>Pennsylvania:</b><br>Harrisburg.<br>Indiana.<br>Monacaan.  |
| <b>Iowa:</b><br>Burlington.<br>Clinton.<br>Council Bluffs.<br>Davenport.<br>Keokuk.<br>Ottumwa.  | <b>Mississippi:</b><br>Vicksburg.  |   |
|  | <b>Missouri:</b><br>Hannibal.<br>St. Louis.<br>Webb City.                                    |   |
|  | <b>Montana:</b><br>Great Falls.<br>Missoula.   |   |
|  | <b>Nebraska:</b><br>Beatrice.<br>Lincoln.<br>Omaha.  |   |
|  | <b>New Hampshire:</b><br>Dover.<br>Keene.<br>Manchester.                                     |   |

Pennsylvania—Contd.  
Mount Carmel.  
Nanticoke.  
Phoenixville.  
Reading.  
Scranton.  
Sharon.  
Shenandoah.  
Tamaqua.  
West Chester.  
Rhode Island:  
Central Falls.  
Providence.  
South Carolina:  
Columbia.

South Dakota:  
Sioux Falls.  
Watertown.  
Texas:  
Beaumont.  
Brownsville.  
El Paso.  
Galveston.  
Houston.  
Marshall.  
Sherman.  
Utah:  
Ogden.  
Vermont:  
Burlington.

Virginia:  
Richmond.  
West Virginia:  
Huntington.  
Wisconsin:  
Appleton.  
Racine.  
Superior.  
Wausaw.  
Sheboygan.  
Wyoming:  
Cheyenne.  
Sheridan.