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The Educational Leader, Vol. 4, No. 2: Industrial and Vocational Education and Art Number

Kansas State Teachers College

THE EDUCATIONAL LEADER

INDUSTRIAL AND VOCATIONAL EDUCATION and ART NUMBER

Published by the Faculty of the
KANSAS STATE TEACHERS COLLEGE
PITTSBURG, KANSAS

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Mechanic Arts Building, Kansas State Teachers College

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The Educational Leader

MELLICENT MCNEIL, *Editor*
WILLIAM T. BAWDEN, *Associate Editor*

Contributors to this issue:

Industrial and Vocational Education Faculty directed by WILLIAM T. BAWDEN

Art Faculty directed by ELSIE LEITCH BOWMAN

VOL. 4 JANUARY, 1941 NO. 2

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Published four times a year in November, January, March, and May, by the Kansas State Teachers College of Pittsburg, Kansas.

Entered as second-class matter, January 29, 1938, at the Post Office at Pittsburg, Kansas, under the Act of August 24, 1912.

The EDUCATIONAL LEADER

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Industrial Arts in the Small Community

WILLIAM THOMAS BAWDEN

The latest *Educational Directory of Kansas,* compiled by the State Superintendent of Public Instruction, lists a total of 687 cities and towns, of which 598, or 87.03 per cent, are classified as third class, which includes communities of less than 2,000 population. Size of community is not an accurate index of high-school enrollment, since at least two or three consolidated district or community high schools in third-class communities report enrollments larger than that of the smallest high school in a first-class city. Nevertheless, the fact that there are in Kansas nearly nine times as many communities having a population under 2,000 as there are having a population over 2,000 emphasizes the significance of the small community in this state.

According to a study made last year with the assistance of county superintendents, all cities in Kansas of the first class (11, having over 15,000 population) offer instruction in industrial arts in the high school. All but three of the 78 cities of the second class (population 2,000 to 14,999) offer such instruction. Of 598 cities and towns of the third class, 443, or 74.1 per cent, offer such instruction.

It is apparent that neither the size of the commnuity nor the enrollment in the high school is the determining factor, since more than 20 schools reporting enrollment of 40 pupils or fewer include industrial arts in the curriculum, and at least 13 schools reporting enrollments of 200 pupils or more do not.

Since there are in the State of Kansas 443 cities and towns of the third class which offer instruction in industrial arts in high school, we have ample evidence (1) that there is a genuine community demand for such instruction, and (2) that it is possible to provide such instruction in the small high school. Further, the fact that there are 150 or more communities in Kansas which do not report industrial arts in the high-school curriculum is evidence of a potential demand for this work which is not now being met.

The problem of the small high school is not by any means confined

to the state of Kansas but is nation-wide in significance. According to the 1939 Yearbook of the American Association of School Administrators, nine out of every ten schools and 55 per cent of the teachers of the United States are in communities of less than 2500 inhabitants. Of 23,237 public high schools reported in 1934, 10,768, or 46.4 per cent, enrolled fewer than 100 pupils, and 5,594, or 24.1 per cent, enrolled from 100 to 199 pupils.

Industrial arts is not the only subject in the curriculum that experiences difficulty in accomplishing satisfactory results in the small high school, nor is the attempt to meet the requirements of college entrance and accrediting agencies the chief cause of the difficulty. The small enrollment is itself probably the chief limiting factor. Even if entirely freed from pressure by accrediting agencies and other outside influences, it would still be difficult if not impossible for the small high school to provide the full round of education demanded today. In many of these schools the classes enroll no more than five or six pupils each, and the teacher is expected to teach four or five different subjects daily. The wheels turn, but the output suffers.

This is not the place to consider the argument for larger administrative units and the consolidation of school districts so that no high school would fall below a minimum size which is sufficient to insure reasonable educational advantages for all children. Surely society will at some time address itself seriously to the question, why do we continue supporting small schools? Some day we shall replace community pride in the *local* school with universal pride in *good* schools.

The number of pupils enrolled in the small high school affects the industrial-arts program in several ways. A school that enrolls 100 pupils may have 50 boys. If all boys are required to take one unit of industrial arts and permitted to elect a second unit, the teacher may count on two classes each semester of 12 to 15 boys each. This provides about one-third of a teaching load, and requires that the teacher be qualified to teach in other fields. It also means that the equipment is in use only one-third of the time and stands idle two-thirds. Because of the nature of the equipment, the shop cannot be conveniently used for other purposes. We have here an economic problem that is practically insoluble and can be dealt with only by adjustment and concession. The smaller the school the less easily can it afford to set aside a room for a shop and appropriate the funds for equipment, and the less easily can it afford to have any room or equipment standing idle part of the time.

The figures already cited, however, show that many small high schools are making the necessary adjustments successfully, and are providing instruction in industrial arts. This fact is more important possibly than an analysis of the difficulties that must be overcome in introducing and maintaining the work. The force which actuates superintendents and principals in the offering

of instruction in industrial arts in the small school appears to be the belief in the importance of this subject in the curriculum regardless of the size of the school or of the community.

INDUSTRIAL ARTS DEFINED

One of the noteworthy trends in public education is the broadening conception of what is to be accomplished by including industrial arts in the curriculum, and consequently a broader conception of the means through which the desired ends are to be attained. Since many writers have attempted to define industrial arts, a study of these definitions affords a convincing demonstration of the progress that has been made in educational thought and practice during the last two or three decades especially. One of the most recent of these definitions is the following statement, in part paraphrased, from the report of the National Committee on Industrial Arts appointed by the Commissioner of Education.[1]

> Industrial arts is a phase of general education that concerns itself with the materials, processes, and products of manufacture, and with the contribution of those engaged in industry. The learnings come through the pupil's experiences with tools and materials and through his study of resultant conditions of life.
>
> Through participation in a well organized and well administered program of industrial arts the pupil: (1) gains knowledge of the changes made in materials, and of the tools and processes used to make these changes; (2) grows in appreciation of the value of information regarding occupations as a background for a wise choice of a career, and of the importance in modern life of tools and industrial processes; (3) increases in ability to plan and execute constructive projects; and (4) develops attitudes of concern for safety practices.
>
> Largely manipulative in character, yet affording content of an informative, technical, and social kind, industrial arts contributes to complete living because it meets needs that are real and satisfies impulses that are inherent. It makes a unique contribution to intellectual development, to social orientation, and to economic adjustment.

Industrial arts does not claim that it alone accomplishes all that is implied in this program. It freely admits that substantial contributions to these desirable ends are made by other subjects in the curriculum and by other experiences within and outside the school. The point is that industrial arts makes a contribution that is not made by any other subject, which, if omitted, leaves the education of youth incomplete.

This discussion is based on the conviction that industrial arts in the curriculum is indispensable to a complete and rounded education for growing children. Educational literature is filled with the teachings of the philosophers and reformers which cannot be expressed in terms of a school or a curriculum if industrial arts is left out.

Industrial arts, or educational handwork under some other name, has been part of the high-school curriculum for many years. This subject has received greatly increased attention during the past 10 to 20 years, because of a number of in-

[1] *Industrial Arts, Its Interpretation in American Schools.* U. S. Office of Education, Washington, D. C., Bulletin, 1937, No. 34, page 1.

fluences tending to keep boys and girls in school longer and growing realization of the fact that something in addition to book learning is needed. We have arrived at the point where the young man is no longer wanted in industry or business until he is at least 18 to 21 years of age. The time when a boy could drop out of school at 12 to 14 years of age and work up to a position of any consequence seems definitely passed, never to return. The time is almost at hand when practically all boys and girls will remain in school at least until graduation from high school.

It is gradually beginning to dawn upon the public, members of boards of education, and school administrators alike, that a college-preparatory curriculum in the high school no longer meets the needs of 90 per cent of the pupils enrolled, as once was the case. Those who have gone to the other extreme, and have attempted to make the high-school curriculum 90 per cent vocational have met with insuperable obstacles. There are several reasons for this, but one is sufficiently compelling and easily understood, namely, the difficulty of determining what vocational courses to offer. The types of jobs open to beginners are so varied in their requirements that no school, not even the largest metropolitan high school, could undertake specific preparation for more than a small fraction of them. Further, many beginning jobs require only short periods of training that can be provided better on the jobs themselves than in any other way.

The conclusion of many students of these problems is that the public school should not attempt specific vocational courses, at least before the last two years of the senior high school, but should endeavor to provide the broadest possible general education designed to help young people discover their own interests, aptitudes, and abilities. This means opportunity to try themselves out at as many different types of activity as possible. If the experiences can be provided in high school that will develop versatility and adaptability, sending each graduate out "with several strings for his bow," a far more significant service will be rendered to young people and more effective preparation for life than they are now receiving in many communities. In this effort to provide breadth and variety of schooling, and especially meaningful *experiences*, industrial arts makes a unique and indispensable contribution.

INDUSTRIAL ARTS ESSENTIAL

Whether we consider education from the point of view of democratic society to be served by the production of citizens prepared to realize their opportunities and to discharge their responsibilities in full, or whether we think of the individual possessed of a full round of physical, intellectual, social, and spiritual possibilities to be cultivated and realized, we have every incentive to develop a program of public education that takes full account of all the essential factors. It is not necessary to argue that the requirements of good citizenship are just

as discernible and just as urgent in the small community as in the large, though they may be somewhat different. It is not necessary to argue that the need of the child for opportunity to grow and to develop all sides of his nature is something we must reckon with regardless of the environment in which he happens to be reared.

Whatever the size of the community or school, the accepted objectives of public education should govern in determining the program. Since the objectives of education as a whole do not differ widely as we go from place to place, we may take one step further and say that the fundamental objectives of the industrial-arts teacher and pupil are substantially the same in all types of community. One of the best and most widely accepted statements of the objectives of the industrial-arts teacher is that formulated by a committee of the American Vocational Association. It is not necessary to reproduce the entire list of 12 objectives here. I select five only, to afford a background for this discussion.[2]

1. To develop in each pupil an active interest in industrial life and in the methods of production and distribution.

3. To develop in each pupil an appreciation of good workmanship and good design.

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

11. To develop in each pupil a knowledge and understanding of mechanical drawing, and the ability to express his ideas by means of a drawing.

12. To develop in each pupil elementary skills in the use of the more common tools and machines in modifying and handling materials, and an understanding of some of the most common construction problems.

Supported by the reasonings of the psychologists and the educational philosophers and fortified by the pragmatic test of decades of observation and experience, the advocates of industrial arts maintain that these objectives are equally valid in the metropolitan center, in the small town or village, and in the rural community. Differences among the industrial-arts programs in communities of differing types and sizes, therefore, are largely administrative and concerned with matters of means and methods, rather than in the nature of experiences to be provided.

OBJECTIVES EXAMINED

If we examine the stated objectives with the view to determining what facilities are required to make the instruction effective, we note first the breadth and comprehensiveness of the concept. We undertake to develop in each pupil "an active interest in industrial life and in the methods of production and distribution, ability to use mechanical drawing effectively to express ideas, and elementary skills in the more common tools and machines." At the outset, therefore, we may say, negatively, that a narrowly concieved program of industrial arts, limited to any single medium (whether wood, metals, electricity, printing, ceramics) is inadequate.

[2] *Standards of Attainment in Industrial-Arts Teaching*. Report of a Committee. American Vocational Association, Washington, D. C. Page 12.

An industrial-arts program of woodwork and drafting is very effective and commendable, so far as it goes, but the addition of a third unit, metalwork, or a fourth, printing or electricity, increases the educational value of the instruction entirely out of proportion to the physical addition to the equipment.

The essential point, if we are to make industrial arts broadly *representative of industry,* is to seek as great a *variety* of experiences, tools, processes, and materials as possible within the limitations of good instructional organization and economical administration. In any high school large enough to employ two or more industrial-arts teachers, the desired variety is secured by equipping two or more different types of shop. Thus a large metropolitan high school employing six industrial-arts teachers might provide a drafting room, woodworking shop, metalworking shop, electrical shop, printshop, crafts shop. If organized on the junior-senior-high-school plan, each boy, unless excused for some satisfactory reason, might be required to enroll for one semester or one-half semester in each of the six types of work. After the completion of the required work, he may be permitted to enroll in more advanced courses of his own selection.

A smaller school system employing only three industrial-arts teachers can accomplish approximately the same results by equipping three shops, each of which accommodates two types of work that are more or less closely related. A still smaller school system will provide two shops each of which includes three types of work.

The term "general shop" is used in referring to a plan of organization and equipment that permits one teacher to carry on an instructional program in two or more different lines of shopwork, with or without the accompanying drafting. A number of technical problems are involved which need not be discussed here, but experience has demonstrated that the plan is practical and that its advantages outweigh the valid objections.

THE GENERAL SHOP

We come now to the application of the general-shop plan of organization to the small school which employs but one industrial-arts teacher, in many cases requiring only one-half or two-thirds of his time in the shop. This is the situation in which the general shop is considered to render its best service, by providing some at least of the advantages heretofore limited to the larger school. It is possible for the exceptional teacher to carry on six or seven lines of industrial-arts shopwork simultaneously in one room. Special equipment, special instructional materials and devices, and special methods are essential. With all these aids, only the exceptional teacher is equal to the task.

A more workable and a more defensible prescription for the one-teacher industrial-arts shop is an organization that includes drafting, woodwork, and not more than one or two additional lines of shopwork. A considerable assortment of types

of shopwork is available from among which to choose. Since it is impossible in one shop to set up a thoroughly comprehensive and complete program, the choice of additional shop subjects is secondary in importance to the quality of the teaching, adequacy of the equipment, and the effectiveness of the organization.

A very satisfactory plan for a small-school shop to accommodate 18 pupils is to provide equipment for six pupils in drafting, six pupils in woodworking, and six pupils in metalworking. All this equipment is in one room. Each class is divided into three sections corresponding to the three types of work, and all three types of work are under way at the same time. By shifting the sections at stated intervals, each pupil receives instruction in all three types of work.

No scientific data are available upon which to base a decision, but it seems to be generally agreed that one-half semester, or nine weeks, is the shortest practicable period for this plan. The semester is much better. A good way to approach a solution of the problem is for the administration to determine the minimum amount of industrial arts that will be required of all boys or of those boys who elect the subject. If this amount is to be one unit (36 weeks), for example, and the shop is equipped for three types of work, the instructor will organize the program in three courses of 12 weeks each and fix the dates for shifting sections accordingly.

If all conditions are favorable, the program can be greatly strengthened by the addition of a fourth type of shopwork to the foregoing layout.

THE FINANCIAL PROBLEM

Some attention must be given to the financial problem, for lack of means is given probably more frequently than any other as the reason for failure to act on any suggestion for the improvement of public education. It is a matter of observation that if a school building is destroyed it is often replaced with a better one. It may be surmized, therefore, that "inability to find the money" may be more accurately replaced in some instances by "lack of conviction of the desirability" as a reason for denying or delaying improvements.

It may be noted in this connection that the National Commission on Schools in Small Communities, after three years of study, announced the following conclusion:[3]

> Today in many small communities children are denied the educational opportunities to be expected under a democratic form of government. In most instances this neglect arises from lack of financial resources and of educational leadership.

The two causes assigned for failure or neglect to provide in some communities the educational advantages that have been found possible in others characterized by similar conditions are closely bound to-

[3] *Schools in Small Communities.* Report of the Commission. American Association of School Administrators, National Education Association, Washington, D. C. 17th Yearbook, February, 1939, page 5.

gether, for educational leadership is the accepted agency through which to seek solutions for financial as well as other problems of public education. Some of the more enlightened members of the community may acquire a vague sense that the local schools are not all that they might be, through the reading of magazine articles, listening to lectures, contacts with other communities, and in other ways. But upon educational leadership clearly rests the responsibility for taking the initiative in developing community appreciation of what the schools should be doing for young people.

The fact that many small communities are including industrial arts in the public-school curriculum is itself a satisfactory answer to the question as to whether it is practicable. The fact that children are very much alike, wherever they may be born and reared, and the arguments of the educational philosophers are sufficient to establish the desirability, even the indispensability, of industrial arts as an element in the curriculum of the small school as well as of the large one. Educational leadership, therefore, does not accept "it cannot be done here for the lack of funds" as the permanent and final answer to the question.

EXPERT ASSISTANCE

The school superintendent or principal contemplating action will seek advice and assistance on the technical problems and details involved, in the same way that he would seek advice if he were about to establish a school orchestra, or a health clinic, or a teachers' retirement plan, or any other special feature of a modern school. Without such advice there is the possibility of omitting essential details, of making mistakes that are rectified later only at considerable cost, and of making important decisions that must be reversed with great inconvenience.

The problem of the industrial-arts program presents itself in two forms: (1) in the school in which the subject is being introduced for the first time, and (2) in the school in which it is believed that improvement, reorganization, or expansion can and should be undertaken. In the former case, it is sufficient for the present purpose to suggest that it is not necessary to start the department off fully developed and complete. Since in the small school the teacher will devote only part time to this subject, the work may very properly start with a modest initial outlay, supported by the promise of subsequent annual appropriations in keeping with ascertained needs and demonstration of success. In the latter case, the effort will be to salvage as much as possible of what is good in the old, to reduce that which must be discarded to the lowest terms, and to introduce the new no more rapidly than it can be assimilated effectively.

THE TEACHER

The teacher is the key to the success of the industrial-arts program in the small school, as he is in any school. This truism is admitted openly in teachers' meetings, P-T-A

meetings, and other community meetings, but sometimes forgotten or overlooked in the employment of teachers. Only in very unusual circumstances should a school shop be planned, the equipment ordered, or the course of study determined upon before the teacher who is to have charge of the work has been appointed and is available for consultation.

The small community is handicapped in the selection and retention of a superior teacher of industrial arts by the competition of larger communities, as well as by the relative scarcity of the supply. The school administrator is obliged to make some adjustment between the operation of supply and demand, on one hand, and a traditional and more or less inflexible salary schedule, on the other.

A serious problem of the industrial-arts teacher in the small school is the ease with which he falls into a rut and allows things to "slide." Since he must teach two or more other subjects as well, the amount of outside study and preparation demanded of him leaves insufficient time and energy to keep his shop and tools in proper condition.

One of the objectives cited above is "to develop in each pupil the habit of an orderly method of procedure in the performance of any task." No one knows better than the shop teacher that he can accomplish little if anything in this direction unless the shop itself is carefully planned and organized, with "a place for everything and everything in its place" at the proper time, unless there is system in his management of the shop and control of pupils, and unless there is a well organized course of study.

It is partly a problem of isolation. He is seldom visited by other industrial-arts teachers who would be competent to discuss technical details with him. He seldom has opportunity to visit other schools and other shops, and thus to compare his program with what others are doing. It is not likely that he attends any convention of industrial-arts teachers during the year at which he might acquire some new ideas. Because of his low income and the absence of assurance of anything much better for the next year, no one has the heart to require him to go to summer school.

The ones who suffer most from this state of affairs in the small school are the pupils. Perhaps we should think more about doing something for them.

Art and the Home

ELSIE LEITCH BOWMAN

A notable increase in art consciousness has been evident in our country during the last few years. In our early history we were so occupied with overcoming the dangers that beset a pioneer people and in supplying ourselves with the necessities of life that we gave little thought to the aesthetic side of living. However, our early colonial ancestors did create much that is beautiful, for, in building their shelters and in furnishing their homes, they constructed as adequately as possible for their needs with the materials at hand. They worked with that unconcious sincerity that makes the creative expression of a child delight us with its unstudied beauty. Much, therefore, that the early colonists built gives us satisfaction because one of the fundamental principles of art is that the object shall be appropriate to the needs of the builder and that the material shall harmonize with the surroundings and with the use to which it is put.

Later, as the early settlers prospered, their whole attention was given to commercial interests, the struggle for wealth becoming quite naturally their main objective. This was true in the first place because of the comforts of life which it would furnish, but it soon led to the mad struggle for money for its own sake and for the standing which it gave to wealthy persons. Then began the era of display, each vying with the other to see who could make the greater show. Immense sums of money were spent for homes and surroundings, the value of these homes being gauged by the cost. Many were imitations of foreign styles which were very expensive but which were in no way appropriate to their location or even to their use. Unrelated ornament was often added, resulting in what is sometimes referred to as the "gingerbread" decoration of the "gay nineties." Statues of prominent people began to fill public squares and other inappropriate places. Over decorated furniture and other furnishings filled the homes. Walls were covered with heavy gilt framed paintings bought for the size or cost rather than for their art value. Many dealers made fortunes while the purchasers built private galleries in their homes in which to store art collections.

QUEST FOR BEAUTY

During the depression the conditions of living changed, and people's minds turned more from material interests to the less tangible and finer things of life. A desire for higher learning sent great numbers to college. The motion picture, the radio, and the automobile revolution-

ized the viewpoints of people, and the new leisure, a by-product of the machine, caused them to turn to crafts and other arts for relaxation and satisfaction.

More and more people are demanding beauty in their homes, and are striving to know what is beautiful and how to produce it. Cities are awakening and are making efforts toward civic improvement. Recently the government, through its PWA, has been sponsoring art in public places, and the murals in government buildings have done much to arouse art interest in our nation. This movement has stimulated the development of the fine arts in this country to so remarkable a degree that painters and sculptors of note have quite outdone themselves; many unknown artists also have been discovered, some possessing such distinguished talents that they are being given opportunity to develop them further. The art departments of the schools have also had a great influence through the children toward an interest in art and its place in the home and community. No one questions the value to the nation of an "intelligent" knowledge of the fine arts because of their broadening influence and the capacity which they develop for increased enjoyment of living. Though a person may not be conscious of the fact, it is true that one enjoys his work as well as his play much more in beautiful than in sordid surroundings. Recognizing this fact, factory owners have discovered that by improving the appearance of the grounds and buildings their employees are able to do more work and to keep in better physical condition because of the mental uplift which it gives them.

CIVIC DEMAND

The civic art movement which started a number of years ago in a few of the more progressive cities has spread until now most places of any note have become conscious of a need for improvement, such as in the laying out of parks, widening of streets, making zoning regulations in buildings, tearing down undesirable sections and rebuilding better ones, and following certain organized plans for beauty. Chambers of commerce, women's clubs, and other civic improvement organizations have been responsible for much progress, and undoubtedly the automobile has contributed its share through its demands for safer and better highways and city traffic accommodations. By means of the car we have become a traveling public with a critical attitude toward communities we visit.

To fulfill the requirements for beauty, a city should first have a well planned lay-out or arrangement. In order to function most perfectly, streets must be made wide enough to cope with the problems of speed and congestion. As very few of the older towns had an original plan that has been carried out, we experience a feeling of disappointment in driving through them. Although there may be sections that are very beautiful, we suddenly run into a tract that violates all the laws of harmony.

THE HOME

The unit of city building is the home, and it takes many homes to make a city. Each is of more or less independent construction and can be controlled only to a certain extent. Therefore, to be sure to have a city that is wholly beautiful, we must have an art minded community willing to conform to the fundamental principles of beauty.

Since one of the laws of good design is that a building shall conform to the requirements of its use, the geographical influence may produce appropriate design or pattern. Geographical conditions have always influenced architecture from the time when the earliest shelters of man were constructed for protection from the elements and from other dangers to the present. This is shown quite noticeably in our own country during the early Colonial days. In the northern states the houses were built of wood because it was more accessible than was other material, while in Virginia, from its very beginning, bricks were used because satisfactory clay for making them was early discovered. The climate of the northern section produced the sharply pitched roof for shedding snow, and it also accounted for the small windows and various other forms of insulation from cold. Even the chimneys were placed inside the walls, instead of outside, in order to make use of all the warmth. The compact arrangement of the groups of buildings on the farms was also a direct result of the cold climate. In the South the rooms were built with high ceilings for coolness in the summer and with a veranda, or gallery, extending all the way across the front for shade. In the North the porch was small in order to let as much sunshine as possible into the house.

Foreign designs may also be appropriate, if they have been brought to the country by colonists for such designs are an expression of social inheritance and an interpretation of racial feelings. For example, foreign influence is shown in the wrought iron grills and gates in Charleston and New Orleans, brought there by French settlers; in the Southwest through the Spanish influence came adobe buildings which have low horizonal lines, small windows, and a patio. This style was adapted to the local material, the climate, and the available type of labor.

Building in relationship to the environment in material and line is being generally recognized today as a trend toward greater harmony. In the architecture of our time, Louis Sullivan led the way with his solution of the problem of the exterior of the sky-scraper, a type of building purely American. He urged that its design should conform to its function and to the material with which it was built. He was followed by Frank Lloyd Wright, who revolutionized domestic architecture in the Middle West by harmonizing the long low lines of the roof with the surrounding land, so that they appear an organic part of the landscape. He used the inherent beauty of the material for decoration.

In laying out a city and in plan-

ning a home and placing it on the lot, certain fundamental principles must be considered if one is to have a city beautiful. In the first place, the city should have a civic center to which one's attention is called. This might be termed the heart of the city. There may of course be a number of other secondary points of interest. There should be a balance and a harmony of arrangement, a pleasing proportion, and a feeling of unity of the whole. The lines of direction, the shape of the masses, and the color should furnish a pattern full of rhythm. Today when one can view the city from above, he can see and understand better the meaning of these terms or principles of good arrangement.

Some cities are colorful and some cities are dull. Color may create unity in them and may add much charm. Certain kinds of building material may be dominant in a community and because of this certain colors may prevail. An illustration is to be found in localities where there is a dominance of white and cream colored houses with red tile roofs. These have generally charmed us, especially when placed in a green setting with brilliantly colored flowers.

After considering the city as a whole we come to the study of the home. To regulate possible mistakes of individuals, certain zoning laws are desirable as they will help toward securing harmony in the appearance of the street. But much of the beauty of the neighborhood depends upon the taste of the individuals who build. First the house must be planned to harmonize with the ground space as regards size and location. It should appear to be well supported by the surrounding ground to which it belongs. Many a beautiful home has been spoiled by lack of sufficient foreground. As we approach, the whole front of the house and grounds should become visible at once, and we should have space to see it all at a glance. In order to be able to do this, the house should be set back from the street a distance equal at least to the width of its front, and, if a tall house, even farther. We grasp the contour before we notice the details of windows, doors, etc. Then as we approach these details begin to receive our attention. The front is the formal part of the home, for it is open to the public, and we cannot as a rule have any privacy there. The grounds at the rear may be as personal as one may wish, and the garden or a part of it is often arranged and spoken of as an "outdoor living room."

LANDSCAPING

It is important when building a home to select a type that will harmonize with the shape of the land on which it is to be placed. For example, a colonial house should be built on flat level ground because of its formal arrangement while irregular designs may be used on a hill side.

The plantings on a lot are most important in regard to their size and shape. Trees are quite necessary, but they should be chosen with care. Their future growth and their loca-

tion in relation to the house must be considered. They may be placed at the corners of the lot or where they will not interfere with the view. Trees with branches starting high above the ground are perhaps best.

Plantings around the foundation must not be permitted to smother the house or entirely to cover the base, as part of the foundation support of the house should be visible, for we have a disturbed feeling if we cannot see at least some of it. But we should have enough shrubbery to give a transitional line from the walls in order to "tie it" to, or make it seem to belong to, or grow from the ground. In selecting, one may not always choose that which one likes the most but that which is most appropriate for the location and for the space it is to fill.

We want our homes to suggest a welcome. Therefore we make our entrance door as attractive as possible. This effect may be produced by the design of the door itself, or by means of its immediate surroundings of porch, steps, or formal planting at the sides, or by the attraction of the porch lights, or even by the charm of the door knocker, the thought of which in itself expresses a welcome. The color and arrangement of the interior radiate the spirit of hospitality, or lack of it, as one enters the house. Certain colors create a sensation of cheer, which is most desirable. The psychological effect of color and the importance of its consideration when planning the surroundings is quite generally recognized today.

INTERIOR DECORATION

In this strenuous, swift moving era, an atmosphere of restfulness in the home is perhaps more necessary than ever before. This may be secured by stressing the horizontal and vertical lines in the rooms rather than the disturbing oblique ones. A center of interest is also desirable. It may be a fireplace, a piano, a bookcase, or perhaps a stand with a vase of flowers well arranged. The fireplace is the ideal point of emphasis attracting interest by its warmth, its glow, and its movement. Backgrounds should be restrained in hue, while movable objects may be permitted more brilliant colors.

If we are to create beauty in our environment, we must have an arrangement of parts that is orderly, appropriate for this purpose, rhythmic, harmonious in size, color, and arrangement. Everything must be brought together in such a way as to produce the effect of an organic whole. If our city, the streets, the lot, the exterior of our home, and all that is contained within it conform to these principles, we may expect to have gone far toward creating beauty. Even then there are certain intangible qualities to be considered which cannot be measured but which must be felt before we can have that perfection around us which we all desire in living.

Industrial Arts in the Elementary School

WALTER LOUIS FRILEY

One of the outstanding problems of mankind since the beginning of history has been transmitting the knowledge learned by one generation to the next generation. It is through this process of learning that civilization has advanced. During the early progress of the race this training was carried on almost entirely in the family group, and skills were passed from father to son. Later there came a period in man's history when the father would place his son under the care of some mechanic to be trained. This led to the development of the apprenticeship system. As man has progressed in knowledge and in the use of tools and machines, this type of training has become more and more the duty of the public, until at the present time the public schools are looked upon to furnish almost the entire training of the youth of both sexes.

If the general aim of the public school is to provide educational training for *citizenship in a democracy*, then it becomes necessary to start this training as early as possible in the life of the child. Since we are living in an industrial age, this type of training should be fundamentally industrial in nature.

PRACTICAL ACTIVITIES

Pupils in the elementary school are interested in the use of materials and things with which they come in contact. They are interested only in the use they can make of these materials. By elementary school is meant the grades from one to six in the public school system. The industrial-arts program fits into this type of education in a fine way because it provides the pupil a means of self-expression such as no other type of program can. Industrial arts provides an appeal that is not limited to age, sex, race, or intelligence of the pupil, and no matter what the work may be it touches upon problems of material, social, and economic values. It also provides excellent opportunities for development of educational experiences on both the artistic and natural sides of the child's nature.

CLASSIFICATION

Since, as has been pointed out, the pupil in the elementary school is interested primarily in materials and the use he can make of them, it has been decided that this can be best grasped by pupils of this level under six general headings:[1]

1. All kinds of materials that can be eaten, such as *foods*.
2. Materials that can be used to protect the body both for warmth and fashion, *clothing*.

[1]Bonser and Mossman: *Industrial Arts for Elementary Schools*, Macmillan Company, New York.

3. All types of materials used to house the race, *shelter.*

4. Certain materials used for holding other materials, such as the preparation of foods, and the like, which may be classed as *utensils.*

5. The materials that man has used for recording and transmitting his experiences, or *communication.*

6. Materials used by man to enable him to make, adapt, or modify other materials to meet his needs; that is, *tools and machines.*

Since the pupil in the elementary school is interested in activity and the use he can make of materials, the industrial-arts program at this level must be organized with this in mind. It should relate closely to his everyday experiences at home, at play, and in the school, for this will enable him to understand and make use of the things with which he comes in contact in the world in which he lives. Such a program also will give him a good understanding of what is meant by industry, and this helps to train him for more efficient citizenship, both in his local surroundings and in the nation.

The pupil in the elementary school is always interested in what has been done by other races of mankind in both ancient and recent periods of history. Using an historical background as a basis, a program of industrial-arts that will be of value at this school level could be easily organized.

LEARNING BY DOING

Dewey, some 40 years ago, stressed the fact that "people learn through doing, or activity." In this he but restated the opinions of the other great men of the past, such as Plato, Rousseau, Pestalozzi, and Froebel. The educational leadership of ancient times is reflected in many programs of industrial-arts as organized for the elementary levels of the public school today. Through such programs the pupil gains worthwhile life experiences, as he "learns by doing," and becomes equipped for life's work both socially and economically.

The elementary grades should be the period in which the foundation is laid for all future work. Since this is true, the work must be well done. The pupil should get a broad knowledge of and training in all the common subjects, such as, reading, writing, arithmetic, world history, and appreciation of the arts, music, the problems of consumer and producer, and the processes and products of machines used by industry. In all this program there is no better place for the integration of all this information than through the activities of industrial-arts. No attempt need be made in teaching industrial-arts on the elementary level to separate boys and girls, for the work, if selected and presented properly, will be of interest to both sexes.

OBJECTIVES

Some of the objectives that have been set up for grades one to six, as stated by the National Committee on Industrial Arts[2] appointed by the

[2] M. M. Proffitt and Others: *Industrial Arts; Its Interpretation In American Schools.* U. S. Office of Education, Washington, D. C. Bulletin, 1937, No. 34.

United States Commissioner of Education, of which Dr. Maris M. Proffitt is chairman, are:

1. To give the child an understanding of the industrial world, including such things as materials used, the changes made in them, and the products into which they are made.

2. To give him an insight into the struggles of mankind which brought about these changes in materials, together with the tools, machines, and processes used.

3. To study the progress made by industry down through the ages.

4. To give the pupil a chance to make use of this information through the planning and constructing of objects of a concrete nature that will develop in the appreciation of industrial processes.

5. To develop in him a knowledge of worthy leisure-time activities.

6. To develop in the pupil worthwhile habits of industry, study, and the like.

7. To teach him how to evaluate the work done so that he may know that it is well done.

8. To teach him a knowledge of other peoples, their habits, methods of work, play, and culture.

9. To develop in him the knowledge that will make him a wise consumer and enable him to take an intelligent part in a society that has become very complex and largely industrial.

There is no better way of giving children of this level an understanding of the methods by which industry makes the things a child uses in his everyday experiences than by handwork activities in the industrial arts. These should include such experiences as printing, simple bookbinding, the making of paper, the milling of grains, the spinning of yarn, the making and decorating of pottery, and many other activities.

A good example of such activities is the making of an Indian or Puritan village, which may be designed for the appropriate season of the year. Such a project creates much interest among the pupils, who may be put to work on the many different phases of planning, constructing, and arranging the parts of the finished enterprise. Hobby activities can be taken advantage of in the same manner. Kite flying calls for the making of kites, and here shopwork is brought into use on a project in which both boys and girls are interested. Boat making not only is of interest to the boys, but the history of how man has conquered the water can be correlated with the work under way. The same thing can be done in the making of model airplanes, and a study of the progress aviation has made and what it means to the human race today. Will it be a benefit to us?, or, if used wrongly, it is going to destroy us? These few illustrations are merely suggestive of the many possibilities that the wide-awake teacher can make use of in organizing a practical program of industrial-arts for the elementary school.

VARIETY OF MATERIALS

The materials that may be used for this work are numerous. Some of them are wood, clay, leather,

metals, cloth, paper, reed, raffia, plaster, paint, cellophane, rubber, glass, enamel, and many others. Through the use of a variety of materials the pupil becomes acquainted with many fields of industry and develops some skill in their manipulation. The development of skills is not the main objective of a course of this type, but this "handyman" skill is a useful thing for a boy or a girl to have in order that he may become a useful and happy citizen later on.

The teaching of good design in courses of this type is of primary importance. It is surprising how quickly young children learn to use colors, for instance, and are able to model a well shaped or designed vase in pottery, or to execute good design in weaving, leather tooling, or in many other materials. The fact that handwork is merely a part of the larger educational program is no excuse for its being poorly executed in either handicraft or design.

Since machines have taken over so much of the work that formerly was done by hand and goods are made much more rapidly than was formerly possible, man has much more leisure than he formerly had. Since this is true, it becomes necessary for the school to meet the problem and to plan a program that will assist youth in planning intelligent use of his leisure time. Industrial arts in the elementary grades lends itself particularly well to the realization of this objective. All kinds of "hobby" activities that are of interest to pupils of these ages can be taken advantage of to this end in the industrial-arts class period.

If a child can become so interested in some hobby that he has not time to play on the streets and come under the influence of bad companions, the school has gone a long way in keeping him out of the school of crime, and to this extent helps to make him a good citizen. The question arises as to how courses of this kind may be given under present school conditions. For all elementary grades this type of work can be handled by the regular classroom teacher if she has been properly trained. Most of this work is of such an elementary nature that it can be done at the regular classroom seat. There should be provided whatever simple tools are necessary for the kinds of work undertaken. Access to running water, a gas hot-plate, some vises, and a large table to work on would help in certain kinds of work. For more advanced work, especially in grades 5 and 6, a special activity room may be necessary, but its expense need not be great.

GUIDANCE

We hear a great deal these days about the question of guidance. I know of no place in the school program where so much may be learned about the characteristics of the child as in industrial-arts class. The beginning of systematic guidance may well be planned in the elementary grades. A properly kept record of the child at work and play will be of great benefit after the child reaches the higher grades and should help the guidance director in advis-

ing him as he goes through high school.

The success of a program of industrial-arts for the elementary grades depends entirely on the teacher; hence, she must be well trained for this type of work. She must know child psychology and what the child is interested in. She must be able to plan and execute simple projects in a variety of media suited to the children with whom she is working. If the school is large enough, an industrial-arts supervisor is of great assistance in planning and administering the instruction. In many small schools, teachers may be found who have had sufficient training in this field to be put in charge of the work. A program of industrial-arts in the elementary grades, well organized and under the supervision of a well trained teacher, will go a long way in stimulating the interest of both parents and children in the work of the entire school system and in the training of children for good citizenship in a democracy.

New Rings for Old

BERTHA A. SPENCER

The styles and forms of finger-rings are legion. A careful study of the many collections to be found in our museums, both at home and abroad, not only gives us a history of the jeweler's art in a compact and complete way, but also tells us much of the history, laws, and religion of different countries and peoples.

The ring is one of the most ancient of personal ornaments. At various times it has been endowed with many mystical and emblematic qualities. It has been associated in one way or another with law, with religion, with love, with death; in fact, it seems to be bound up with most of the significant events of life from the earliest times to our own practical age.

SIGNIFICANCE

Consider the part that a ring plays in the life of an individual. From the day that he receives his first birthday ring, often set with his birth stone, rings mark the important events of his life. There is the baptismal ring, the class ring at graduation from high school and college, the fraternity ring, the lodge or organization ring. All organizations have emblematic rings which are worn and highly prized by their members. The promise to marry is marked by the gift of a ring set with a precious stone. The wedding itself has been symbolized since the ninth century by the band of gold or since 1900 by a platinum or diamond circlet. All this applies to the life of the individual of to-day, but it also applied to the life of the individual in the past. However, in the past the ring had many other meanings. We are told that the "Ring of Solomon" or "Solomon's Seal," as it was called, gave the Hebrew king the power to succeed in all his undertakings. We read about rings with magic effect, rings of healing, rings that bring the wearer special powers.

The ring has not always been worn in the same way. The Egyptians, Phoenicians, and Babylonians wore their rings on the fingers of the right hand. The ring was sometimes carried on a cord worn around the neck. The Greeks and Romans wore their rings on the fingers of the left hand. In the Morgan collection in the Metropolitan Museum is the mummy case of Artemidora, daughter of an Egyptian Pharaoh who reigned in the first century A. D. Three rings worn by the princess are reproduced in gilt on the outer wrappings of the case. The rings are worn on the first, third, and little fingers of the left hand.

There are many references in the Bible to the jeweler's art and to the

use of the ring. We read in the Book of Genesis, "And Pharaoh took off his ring from his hand, and put it upon Joseph's hand, and arrayed him in vestures of fine linen, and put a gold chain about his neck." Hans Holbein, who was a master designer of jewelry and equally skilful in painting it, shows that both men and women of the fifteenth century wore a profusion of rings with large stones set in elaborate mountings. His portraits of Bobert Cheseman, Henry VIII, Anne of Cleves, and Jane Seymour all show rings worn on the index and little fingers of both hands.

The seal played an important part in the daily life of the Egyptian and was used in a variety of ways. It was carried about on the person, no doubt as it is in Egypt today, as a means of identification and to stamp the seal of letters and documents. The carved scarab or sacred beetle served many purposes: historical, talismanic, religious, and decorative. It was not only used as a seal, but also was often buried with the dead to ward off the power of evil which infested the underworld. Many seals were good luck tokens engraved with legends expressing superstitious faith. The Murch collection in the Metropolitan Museum contains nearly 800 pieces of the stamping type of scarab, all quite fine in line arrangement. They are of various materials including gold, carnelian, amethyst, and lapis-lazuli. The signet ring came into use during the twelfth dynasty. It consisted of a single metal wire passed through a scarab and twisted on itself to form a ring. This simple signet ring continued in favor until about the nineteenth dynasty, when it gave way to the gold or bronze ring all of one piece.

SIGNET RINGS

In the Metropolitan Museum are two of the early signet rings of Amenhetep III. One pictures the lion-hunting exploits of the king; the other commemorates the celebration of his marriage to Queen Tii. In this same museum in the Carnarvon and the Murch collections are many examples showing the evolution of the ring from its simple beginning of a single band to the elaborate gold signet ring of the eighteenth dynasty engraved with the name of Pharaoh Tutankhamen.

Closely related to the rings of authority are the rings given as marks of official dignity and rank. Of prime importance are those bestowed upon, and worn by, the higher ecclesiastics. Velasquez's portrait of Pope Innocent X shows the pontiff wearing a ring set with a square stone in a traditional design. The papal ring is broken when a pontiff dies and must be remodeled for his successor. While the present Pope, the former Eugenio Cardinal Pacilli, made preparations for his crowning, March 12, the Vatican craftsmen were busily engaged in remodeling the papal ring, called the fisherman's ring, for Peter was a fisherman. The seal ring of Pope Clement XII can be seen in the museum collection in New York. This ring is made of silver; on one side is engraved a design showing St.

George and the Dragon, on the other the arms of the Pope. Very few Anglo-Saxon rings survive. One of the most noteworthy is the ring of Ethelwulf, King of Mercia, which is to be seen in the British Museum. It is made of gold with massive ornamentation. It is a beautiful specimen of the workmanship of this period.

MOTTO RINGS

During the Elizabethan period it was the custom to wear "motto" or "posie" rings in which inscriptions were engraved, such as "God saw fit this knot to knit" or "Let Likinge Laste." These rings were so called because of the poetical sentiments attached to them. Such mottoes as "Tis God above doth Seal our Love" and "In Thee my Choice I do Rejoice" would indicate that many of the posie rings were also worn as engagement or as wedding rings.

Byzantine jewelry links the ancient and the modern world. It retains the craftsmanship of the ancient Roman Empire and the dignity of classic tradition modified by Christian ideas, but adds the patient skill of the oriental in execution. The style is seen in the contempory mosaic portraits of Justinian and Theodora at San Vitale in Ravenna, Italy. Most of the Byzantine rings bear Christian symbols and more are of gilded bronze than of gold.

The Romans were especially extravagant in the use of rings. The signet use of the ring prevailed, and every Roman appears to have chosen his own design. The portrait of an ancestor, a friend, or some symbol from mythology or poetry served like the coat of arms of the Middle Ages as a mark of identification. Rings and bracelets in the form of serpents or shaped like an Herculean knot were much in vogue. Bezels, the settings within a stone, were sometimes hollow and filled with poison for use in case of emergency. Pliny writes of the officer in charge of the temple of Jupiter, "Being arrested he broke the stone of his ring between his teeth and expired on the spot." Hannibal turned to the poison contained in his ring when he was on the point of being given up to his enemies, the Romans. While poison rings were known to the ancients, most of those to be seen in the museums today are survivals of the sixteenth and seventeenth centuries. Poison rings were of two types. The "Ring of death" had a small projection impregnated with poison. A scratch from this small point meant certain death. In the other class of poison rings the bezel contained a tiny box in which the poison could be carried. These diminutive boxes, however, were not all filled with deadly poison. Many contained miniatures or keepsakes. A few were even used as cosmetic boxes. In the winter the Italian man of fashion wore massive rings, which he exchanged for rings of more delicate workmanship in summer. Bartolomaneo Veneto's portrait of a gentleman was painted at a time when Romans affected the wearing of rings on the index and little fingers.

The fine art of ring making reached its culmination during the

seventeenth and eighteenth centuries. The rings of this period are suggestive of powdered wigs and ruffles and fine satins. The subjects are most varied: portraits, miniature watches, mosaics, marine pictures; in fact, every conceivable subject is to be found.

Goldsmiths attended the country fairs and even worked at the houses of their patrons. The wardrobe accounts of the Medici at Florence contain the name of Benvenuto Cellini as a household goldsmith, with an account of the implements given to him for his workshop in the palace. The implements were few in number and very primitive in character; yet with such as these the Italian goldsmith could fashion the most beautiful designs.

The great personages of Egypt, the richly robed kings and nobles of Mediaeval and Renaissance times, outshown the women in the matter of jewels; but in the best periods of civilization of Greece and Rome and in the present era, jewelry is noticeably absent from the dress of men. Its absence in modern times is understandable, for the stiff, formal lines and dull surfaces of sack coats, derby hats, or evening dress are in no way adapted to enrichment by delicately wrought, sparkling ornaments. Hence we would infer that there has been an intimate connection between jewelry and dress.

While the designs of antiquity excell in abstract beauty of color and form and those of the Medieval craftsman possess a peculiarly naive and ingenious charm, it cannot be denied that the jewels of the Renaissance, enriched with every variety of ornament that the goldsmith could devise, are in their own manner quite superior. The majority possess qualities rarely found together save at this period, such as, boldness of conception, richness of form, and refinement of technique.

MODERN REVIVAL

The art of the goldsmith is today emerging from its long sleep. Since Colonial days the place of the craftsman has been usurped by the machine. All the charm of individual design, the beauty of hand hammered surfaces, the fine regard for form have been engulfed in a desire for cheap production that could be made to come within the reach of everyone. Mechanical speed and perfection became the standards by which this art was measured. But today we boast of a number of goldsmiths who are master craftsmen. They have had an arduous struggle to gain a foothold to compete against commercial odds, but at last their work is recognized as good.

When we speak of jewelry today we take it for granted that one or more stones are used. Greek jewelry, however, was in the majority of cases of gold only. The Egyptians used enamels to a great extent. In Roman work the use of stone became more prevalent. It is not, however, till we reach the period of the Renaissance that the jewels themselves became as important in the design as the metal which holds them. In modern times the expert cutting of precious stones has greatly increased their brilliance, but the

unfortunate tendency has been to sacrifice the beauty of the setting in order to obtain a mere glittering mass of stones.

Many changes have been made in the mounting and designing of jewelry since the beginning of the present century. Yellow gold has been replaced by the use of white gold and platinum. Diamonds, which were formerly held in place by six or eight points, are now set in tiny boxes, and rarely as a single stone. The settings are encrusted with diamonds of various sizes. The cutting of minute diamonds has never been so successfully done as at present. The wide gold wedding ring of fifty years ago has been al most entirely replaced by a plain or engraved platinum ring or by a narrow band of diamonds. The large cluster dinner rings have been replaced by rings containing large single stones; in place of several rings worn on the finger, one important stone is worn. Today jewelry is merely a part of the costume. Lack of taste is often shown when this fact is disregarded.

Industrial Arts and the Amateur Craftsman

EARNEST WALTER BAXTER

Industrial arts and the amateur craftsman, the two terms under consideration, are compound both in form and meaning. The combination of the two is the result of practical application in a gradual industrial development. Prior to the establishment of the public schools, various crafts were by necessity taught and practiced in the home. When the schools developed, they took over the classical and academic, while industry was taking over productive crafts, apprenticeship, and skill training. During this development many social, economic, cultural, industrial, governmental, employment, recreational, and other problems have come into prominence. One of the first attempts made by the schools to give training in the practical industrial crafts was in the form of manual training. The replacing of manual training with industrial arts in the school system has led many to think of the offerings in the curriculum as being indentical.

This conception is as erroneous as to say that learning to multiply two numbers is mathematics. The ability to multiply numbers is a simple, mental, or graphic operative skill of computive value. So manual training is a simple kinesthetic skill of manipulative value. As mathematics, humanities, and science are broad and general, so are the industrial arts. Briefly, industrial courses of study are devoted to training for systematic labor and productive manufacture. Art (as industrial art) is the application of skill, planning, knowledge of materials, and processes to bring about the desired ability and results. Industrial arts are broad, general, and continue to be beneficial to the individual throughout his life.

A craftsman is a skilled and artistically inclined worker (artificer), who works with a measure of the artist's ability. An amateur is one who practices any art, study, or sport for pleasure, not for remuneration. Thus the amateur craftsman is the individual who has developed only a part of the general field of the "teacher objectives" of the industrial arts. He will have developed some "elementary skills," but they will not be of industrial standards of techniques. He will have develped some "appreciation of good workmanship and good design" only in the area or material in which he is experienced. He will have developed a hobby activity that is beneficial in the use of "leisure time." There may be some "guidance" which will result as an outgrowth of the experience of the amateur craftsman.

Thus the problem presents three

lines of consideration: First, the effects (results of objectives) the individual's work as an amateur craftsman will probably have upon him. Second, the effects (results of objectives) the individual's work in the field of industrial arts will probably have upon him. Third, the integrative and functional effects the two will probably have upon the individual.

The experienced amateur craftsman will probably have a great interest in a well established and valuable "use of leisure time," which will bring him no returns except as a substitute for some other hobby which might be more expensive and less valuable. He will probably benefit "socially" and through "worthy home membership." He may be an operator of a simple hand tool: a brush, a golf club, or what not. Some of his skills or techniques are often improper or faulty. He may become proficient in working in the chosen line, but when he has reached the point of industrial (or professional) ability and practice he is no longer an amateur craftsman but has taken up industrial-arts objectives as his goal.

The experienced industrial-arts trained individual has obtained a much broader experience in several areas, kinds of material, and types of industry. He has become more versatile. The industrial-arts student will develop broad interests, basic and accurate techniques, and skills. He will develop resourcefulness and analytical ability. The individual with the co-ordinative, native mechanical ability, who has had the opportunities afforded by a well balanced industrial-arts curriculum supplemented by the fundamental tool subjects, can be trained for a skilled and specialized operation in a comparatively short time. He can usually change readily from one operation, technique, or skill to a new changed situation, thus becoming proficient in many lines of industrial activity. Often his professional industrial-arts field becomes his hobby and consumes his leisure time and interest.

Industrial arts usually leads to hobby crafts for leisure, but the skills are of professional quality; thus, those who pursue them are not properly classed as amateur craftsmen. However, the transition from the amateur craftsman to the industrial-arts field usually requires the breaking down of improper techniques and undesirable methods and the establishment of the industrial-arts objectives, standards, interests, and background. This is the cause for one of the latest steps in general education: the multiplicity of material areas in the junior high-school industrial-arts offering.

The Contribution of Industrial Arts to Adult Education

LEROY BREWINGTON

It is natural that people wish to know what constitutes industrial arts, how the term may be defined, and a somewhat broad perspective of the activities in these huge areas of work which today are fundamental in the development of the most publicized field of human activities, namely, the building of large defense units in the rearming of nations.

Industrial-arts education is being called upon today, as at no other time in history, to function as perfectly as it is possible for man to make it function. Almost without exception the average individual has thought of industrial arts in terms of the small projects made in the workshops of the schools, the places where tie-racks, flower-boxes, floor-lamps, tin cups, and the like are made by boys and girls in the early years of their school activities. But there is a much broader conception of industrial arts or industrial education.

Hall[1] says that industrial arts is to increase the student's knowledge of the world's work, to educate for appreciation of workmanship and intelligent consumption of the products of others, and to permit the individual to sample various kinds of work, as a possible means of selecting a life-work or vocation. Such courses are of cultural or general educational value. They do not aim at training for a marketable degree of proficiency in some definite trade or industrial employment classification.

The world's work, if we may use this expression, especially at this historical period, is largely industrial and has been for several decades. Adult life is concerned as much with the workmanship and other material values as it is with the intangible values of industry. All mechanical trades and many professions are concerned about quality in finished products. The teaching of intelligent consumption of the things we purchase today tends to increase in value to the individual later in adult years. Guidance also plays a very important part in industrial arts and both are fields of unlimited exploration. Although skill plays an incidental part there is a vast richness in industrial-arts education that is cultural as well as general, and serves as a highly potential foundation for adult activities in all fields of endeavor, especially of the physical type.

Snedden defines industrial arts education as those forms of training and study based upon industrial pur-

[1]Herman S. Hall: *Trade Training in School and Plant*. The Century Company, New York, 1930. p. 30.

suits and designed to enhance general intelligence and vocational guidance in the field of industrial occupations.[2]

Dr. O. A. Hankammer, in "The Vitalized Industrial-Arts Curriculum," states:[3]

> A vitalized industrial-arts curriculum can contribute heavily in meeting the responsiblities of general education. It cannot be otherwise when every activity of life is directly influenced, and often controlled, by the results of our technological advancements. The establishment of an industry-machine culture pattern is a fact, not a fancy.

A functional industrial-arts program today has become a necessity for the proper establishment of an adult-education program, whether it be for an improved society and better living or for specialized operations in industry.

Burl N. Osburn of the State Teachers College, Millersville, Pennsylvania, writes:[4]

> The school must come to see itself as a public agency serving all ages and all classes. Its academic tradition is breaking down under the pressure of reality, and the growing needs of greater numbers of our people for continued education not only of the usual make-up type, but in the techniques of reconstructed living.

We clearly see that in this age of machines and in the use of the products of such machines we are learning to live in an industrial democracy. The failure of the real purposes of industrial arts is manifested when we do not conform to the environmental pressure of this modern society because it is through this field of education that we reach functional adult life that is so necessary to progress and the fruits of its labor.

By the foregoing explanation we better understand the true values of industrial education as they apply to the youth of today. With these thoughts in mind we turn to a discussion of adult education and its relation to the preceding areas of work.

We conceive adult education as education for those who are past school age. There is an old saying that life is education in itself, but the adult education we speak of is that planned with a very definite purpose in mind. Unless we have a purpose in mind we never learn except as we experience difficulties and contacts which force learning. This may be a very practical type of education, but it is far from being organized and planned toward definite ends as it should be for mature individuals.

Adult education is apparent in all types of education, depending on the ages of the learners and the purpose of the instruction they receive. In one instance a worker known as an electrician could do nothing but regular house wiring. He enrolled in an evening class to learn radio work. This is a type of adult education in that it permits the worker to expand in his abilities and skills to do a larger range of work in his field.

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[2]David Snedden: *Vocational Education.* The Macmillan Company, New York, 1920. p. 549.

[3]Otto A. Hankammer: "The Vitalized Industrial-Arts Curriculum." *Industrial Arts and Vocational Education Magazine,* Vol. 29, No. 8, October, 1940, pp. 314-316.

[4]Burl N. Osburn: "Industrialism and Adult Education." Ibid, pp. 310, 311.

In another instance we find a young housewife enrolled in a daytime class offering upholstery and refinishing of furniture for the household. She does this better to furnish and decorate her home, thereby making for more pleasant and more comfortable living. This is adult education.

We may cite other examples such as the store clerk attending a showcard writing class, the railroad roundhouse worker attending classes in locomotive engineering, and a painter studying art as it applies to home and industry.

Snedden[5] defines vocational education as any form of education, whether given in a school or elsewhere, the purpose of which is to fit an individual to pursue effectively a recognized profitable employment, whether pursued for wages or otherwise. If given after the usual school age, this type of education may be a part of adult education.

In past years, especially in the period of formal schooling for many adults today, only the interests of the purely academic things of life were developed in the schoolroom. It may be admitted that all legitimate fields of academic training contribute indirectly to industrial life, some more than others. All of us know that those of our parents who were fortunate enough in past years to acquire a high school education and in some cases a college education, eventually had to start an apprenticeship in some trade after leaving school in order to maintain certain living standards for themselves. As far as the material world is concerned this "pre-education" was largely a loss of time. Today we acquaint the young people with a more practical philosophy of life in school, in fact before then, in the industrial atmosphere of the modern home.

Laurence Parker, state supervisor of Smith-Hughes industrial education in Kansas, emphasized the purpose of industrial arts and its contribution to adult life, as follows:[6]

> Mother in the old days was not a machine operator. Give her a good corn broom, a mop, a stiff scrubbing brush two or three good washtubs, a boiler, and a washboard and she was prepared to subdue dirt, her ancient enemy. About the only machinery she had was the egg-beater, the clothes-wringer, and the carpet-sweeper. There wasn't much related science and technical information needed for their use.
>
> Today the modern home is a good-sized machine operating establishment, with its washing-machine, electric refrigerator, electric sweeper, electric iron, gas and electric mangle, electric dishwasher, and electric doughmixer. Sometimes there is also a wringer for the mop.
>
> These are all examples to show that in the good old days there was, or seemed to be, less technical information and related science needed to get along well in life. What there was, was easily acquired from parents and well-informed neighbors. That was the natural way to learn how to build a fire in the kitchen range, what little was known about diet, seed selection, and the care of the family bus and other machinery.
>
> Today father, mother, and well-informed neighbors cannot keep up at the job of learning the related science and technical information of daily life

[5]Op. cit., p. 535.

[6]Laurence C. Parker: "The Machinery of Daily Life." *Industrial Arts and Vocational Magazine*, Vol. 25, No. 5, May, 1935, p. 148.

and so the teaching of such things, together with many of the skills, has passed into the hands of those who make it their business to know how to do things, why they do them as they do and how to teach others what they know. This is an age of specialization and this big work of teaching oncoming generations to operate the machinery of daily life becomes a trade.

Lewis Gustafson, once said, "Whenever any knowledge or experience in the community that is necessary or desirable for the young of that community to receive or undergo, can no longer be imparted to the young through normal and informal participation in its affairs, then it is the business of the community to provide systematic and definite means for its impartation in schools or through some other agency; and that usually means the schools."

As a result, we, the industrial-arts teachers, are confronted with the job of continually developing our work so that we are able to give our students a type of practical education that will make the next generation efficient operators of the machinery of daily life.

We realize that an interest in industrial arts, which is basic in principle, must be developed as soon as a youngster is old enough to perceive and understand such things. It is too late to develop a functioning interest when one has reached adult life and finds himself endeavoring to perform efficiently a specialized task in one of our large industries. We must realize that any successful endeavor, essential or non-essential, must first be based upon more than a passive interest.

Knowing the source and method of distribution, preparation for use, and the proper use of the things we purchase, has become a vital and necessary part of our existence today. For illustration, industrial engineers tell us that the best electric ice refrigerators have sealed oil units in which the oil is not exposed to contamination. The average individual knows that lubricating oil does not wear out; it becomes non-useable only when exposed to foreign matter or becomes diluted. With this information one may choose more wisely the most efficient refrigerator, knowing that the machine will not be subject to continual lubrication expense and the wear and tear on the bearings.

William E. Warner, in discussing this general topic, states:[7]

Considerable attention is being given to distribution and to the consumer, who more than ever needs to be an intelligent chooser and user of the products of industry. There is also more reason than before to expect industrial arts to assist in the development of enduring interests in worth-while hobbies. Greater recognition is now given to design and the appreciation of great creations. Exploration also takes on new significance because of the myriads of new materials, resulting processes, and consequent jobs to be studied and experienced. There are so many more tools now which everyone should be able to use with facility. Think, also, of the multitude of technical things about industry which everyone should know. Then, the business of being a success involves the assimulation of desirable personal-social traits, many of which are easy to acquire in the setting of a school shop or laboratory when such is the intent.

Most everyone may understand that these characteristics cannot by

[7]William E. Warner: "Industrial-Arts Research." *Industrial Arts and Vocational Education Magazine,* School Shop Annual, Vol. 24, No. 2, February, 1935, pp. 38-46.

virtue of their nature be first introduced to the adult education level but must come to the age that precedes it in order that industrial arts, foundational by content, may become basic for later programs of specific vocational education or adult education in general, with its multiplicity of offerings for a richer and fuller life.

We found that the usual academic type of subject or activity does not invoke much creative thinking on the part of the learner. Creative thinking manifests itself when emergency or intense interest demands the best of the mind. The field of industrial arts not only asks but demands this type of thinking in order to accomplish desirable results in the usual activities of routine shopwork. To stimulate and nourish this creative type of thinking in the growing minds of young people is excellent preparation for adult education and adult life.

We have convincing evidence that industrial-arts education contributes abundantly to adult education. We enumerate several particulars:

1. It involves considerable training in thinking and solving the problems of adult life in a preliminary way. Since the greater part of this period is concerned in the doing of jobs, then it becomes quite necessary that the youth acquire early habits of thought and action in the industrial-arts drafting-rooms and workshops.

2. We know that a wide range of experiences is more likely to include something that will be helpful in preparing an individual for an occupation that has not yet been chosen than does a very limited range of experiences. What better serves the adult in this respect than industrial arts?

3. Industrial-arts activities seek to give the youth the information and experiences which will interest him in industrial life and enable him to do effectively the things that most boys and men are called upon to do without respect to their vocation.[8]

4. Very few can labor for any length of time in the industrial-arts shop without developing a love for true craftsmanship. This sense of appreciation does not manifest itself in a short period of time but comes through long association and active participation in the practical activities of life.

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[8]R. W. Selvidge and V. C. Fryklund: *Principles of Trade and Industrial Teaching.* The Manual Arts Press, Peoria, Illinois, 1930. p. 35.

Method in the Teaching of Drawing

OTTO A. HANKAMMER

Method in the teaching of drawing is treated largely from the historical point of view in contrast to a possible psychological, comparative, applied, or other study approach that might be used. Space naturally prevents anything like an intensive treatment of the topic. At best, one can only suggest possible areas rich for further study, especially as to details of drawing instruction such as content derivation, curriculums, and the general philosophies held in regard to values of drawing. All these elements are worthy of study.

With some appreciation of drawing as a "tool" subject and how methods of teaching drawing grow out of subject matter, we may examine the development of methods as reflected in things taught in the name of drawing and art instruction.

EARLY DEVELOPMENTS

The leading advocate of drawing instruction in early American public schools was William Bently Fowle, who, in 1821, volunteered to teach drawing in the Boston Public Schools. His instruction began by teaching map drawing to the children taking geography. This was followed by "linear drawing" as applied to geometrical exercises. After obtaining a copy of Louis Benjamin Francoeur's book on drawing, Fowle translated it and published it under the title of *The Eye and Hand.* In the third edition, Fowle introduced perspective and the beginning of instrumental drawing, probably the first mechanical drawing in American public schools. Fowle contended the the method to be used was "by example," that is, the demonstration method.

Another early text dealing with drawing and its methods was produced by Elizabeth Palmer Peabody, who wrote: *A Method of Teaching Linear Drawing.* Elizabeth's sister, Mary T. Peabody, prepared an exercise book correlating reading and drawing under the title of *The Primer of Reading and Drawing.*

In 1822, John Rubens Smith published *The Juvenile Drawing Book* in which he attempted to make drawing a factor in general education. Smith, though following the copy method in vogue then, tried to make it a more rational process. He offered worthy examples to copy and gave an analysis of the principles involved and how to apply them.

A new idea of method in the teaching of drawing was advanced by Francis Graeter, teacher in Bronson Alcott's school in Boston, 1834-1839. He required his pupils to go to nature for their models.

In 1840, Rembrandt Peale, a Philadelphia artist, agreed to supervise, free of charge, the drawing instruction of that city and as a part of the instructional work he prepared a book called *Graphics*. In this book, it is interesting to note that Peale required the pupils first to make copies and then to draw from nature —a combination of the methods advocated by Smith and Graeter. Peale also urged the learning of freehand drawing before mechanical drawing.

The textbook that gave the basic slant or structural set to content in much of America's drawing instruction was William Minifie's, *A Textbook of Geometrical Drawing*. It contained geometric problems, machine parts, architectural work, developments, isometric drawing, mechanical perspective, shades and shadows, and coloring. To list these topics seems like perusing a recent text yet Minifie was a teacher of drawing in Baltimore in 1849.

With Peale and his forerunners we see the beginnings of method in drawing which fundamentally obtained for a number of years. Minifie added the emphasis to the mechanical drawing aspects of this field of instruction. About 1856, F. Ravaisson, writing in the *American Journal of Education*, recommended that "cast" drawing be done. He suggests that Greek casts were preferable although Roman, Renaissance, and Oriental might be used if good. Ravaisson also adds "exercises of reproduction from memory.... of artificial forms, and their ornaments, ... the human figure." Apparently he conceived "cast" and "memory" drawing a theoretical application of drawing as he continues:

> Perhaps to these studies should be added some practical lessons on the employment of color in ornamentation, lessons which would initiate the student to a certain extent in the knowledge of relations and harmonies of tones in color.

Drawing by this time has accumulated these principal methods: copying, drawing from models, geometrical applications, drawing from casts and the human figure. To give a clearer picture of personal interpretation of methods as well as convictions held, the following quotation from the *American Journal of Education*, March, 1857, is offered:

> To teach drawing successfully, it must be taught systematically and scientifically, receiving the same care and attention as other studies pursued. When it is well taught as others, the practice of the art will be found of great practical value, and not wanting in interest.
>
> Let the teacher first give the child some exercises in curves and circles, without reference to drawing from any model, at the same time holding his pencil properly.... There is no better preliminary exercise than the drawing of a circle, guided by the eye.... The scholar should correct and improve each one (circle) according to his ability; dividing it by straight lines into halves and quarters of circles, depending on his eye alone for guidance.
>
> The first step is to imitate some simple form which gives practice in the curve.... From simple objects he should go on gradually to more difficult, always improving and correcting his drawings.

Through the efforts of Superintendent John Dudley Philbrick, drawing became a required study in the Boston schools, 1864. William Newton Bartholomew's methods were introduced. Bartholomew, a drawing teacher in the Girls' High and Normal School, aimed to give pupils a practical knowledge and skill in the art of representation. Merely to copy his example was not enough. He required them to draw an object similar to their copy. Memory drawing was also a frequent exercise. In the drawing of ornament, his method was to require acquaintance with the natural form, the conventional form, and finally the practical application.

Although various texts on drawing had been published, it was not until 1868 that a series appeared. Robert Demcker, of Cincinnati, published these drawing books entitled: *Course of Systematic and Progressive Drawing*. The methods employed in this series consisted largely of drill exercises on parts of plants, animals, etc.

As the New England section of the country was rapidly becoming a great industrial center, it is not surprising that the manufacturers and merchants of Massachusetts, in 1870, made their demands for a practical phase of education articulate through the legislature. In that year an act was passed requiring the teaching of drawing. Any town or city of 10,000 or more must make provision for free instruction in industrial or mechanical drawing.[1] We thus see the beginning of the extreme emphasis upon one phase of drawing instruction. Anderson[2] has made a good observation when he says,

> Industrial drawing, however, though helpful, was not sufficient. It owed its early introduction rather to its practicability as a school subject than to its intrinsic importance.

The impetus given drawing instruction through legislation was further stimulated through the efforts of Walter Smith. He was brought to America from South Kensington, England, in 1870, through the cooperation of Boston merchants and the Boston school committee. Smith became State director of drawing and through his writings, books, and lectures laid the foundations for American art education.

Drawing now had ostensibly for its objective the vocational motive in a rather limited sphere. It was also urged on other grounds and, incidentally illustrates the psychological beliefs held at the time. Burchett[3] claimed that

> Drawing . . . . is a most valuable discipline in early education, if it be viewed merely as a means of development of the faculties, and one equally fitted for all ranks and both sexes.

Besides the apparent emphasis on the mechanical and geometrical applications, texts began to show a more logical organization of subject matter. For example, *Krüsi's*

[1]Charles A. Bennett: *History of Manual and Industrial Education Up To* 1870. Peoria, Illinois, The Manual Arts Press, 1926. pp. 422-434.

[2]Lewis F. Anderson: *History of Manual and Industrial Education.* New York: D. Appleton & Co., 1926. p. 156.

[3]Richard Burchett, "Instruction in Drawing." *American Journal of Education,* 22:57-62, January, 1871.

Drawing[4] illustrates this logical organization by beginning with simple elements and going to the more complex. Being a type of freehand drawing, the work was constructed entirely in line and outline.

By 1873, the University of Cincinnati had developed a course of instruction, of which the abbreviated synopsis is as follows:

1st Year. Drawing from the flat (or plates).
2nd Year. Drawing and shading from round and solid models.
3rd Year. Lessons in drawing the face and form from life.
4th Year. Composition and design.

From time to time books appeared emphasising some one aspect of method, even going so far as to build "systems" of teaching drawing. *Drawing from Memory* by Cavé is such a one. Possibly Viollet-le-Duc's, *Learning to Draw*, falls into this same category.

DIVERSE METHODS AND CONTENT BECOME ABSTRACT

A historical survey of the development of drawing instruction and its methods gives not only a picture of the things actually done but we can see a gradual crystalization taking place which becomes more difficult to change as time goes on. It becomes a tradition to teach drawing a certain way and the content gradually loses contact with the life it was designed to serve. This is particularly true of the drawing supposed to be of value in preparation for industrial pursuits. The exercises remained in the realm of geometrical abstractions while the problems and methods dealt with things industry had outgrown. It is even so today in many situations.

By 1894, when Morris[5] brought out his book on *The Teaching of Drawing*, we find logical organization of subject matter as well as a traditional content administered in a thoroughly formalized manner. An outline of the contents of this book shows how academically a practical subject may be treated:

Straight lines.
Angular lines.
Combination of straight and angular lines.
Curved lines.
Combination of straight and curved lines.
Object drawing.
Scale, and mechanical drawing.
Geometrical drawing, plane.
Geometrical drawing, solid.
Model drawing.
Light and shade.

There were attempts, however, to improve the academic approach to drawing. Sparks, for instance, made a careful analysis in the drawing of geometrical solids. Apparently sensing the need of a new attack on the method of teaching drawing, we find Polak and Quilter presenting their book: *The Teaching of Drawing: Its Aims and Methods*. They termed their proposal "a rational method of teaching." The work was still to be upon an exercise basis. The method was to choose exercises

> within the capacity of the average pupil. We should impose as little convention as possible, encourage individu-

[4]Hermann Krüsi: *Krüsi's Drawing*. New York: D. Appleton & Co., 1872. pp. 1 ff.

[5]I. H. Morris: *The Teaching of Drawing*. London: Longmans, Green & Co., 1894.

ality by compelling the child to exercise his judgment to the utmost of his powers.

They suggested methods of conducting a drawing class, the correction of pupils' work, giving class demonstrations, and emphasized the need of recognizing and handling pupils upon an individual basis. With this work we begin to note a dissatisfaction with drawing content and method. The academic way with its analytical "seeing," fact gathering, skill development, and imitative system, was soon to be subject to attack and rejection in many quarters.

SYNTHETIC APPROACH

Haney[6] noted that there had been "a considerable advance through all schools toward the more natural use of drawing as a means of expression by young children" but it remained for Arthur W. Dow[7] to present a method which was revolutionary as compared to the academic method. He termed it the "synthetic" method.

> The approach is through structure—the building up of harmonies of shape, tone, and color—and the purpose is the development of power in the individual. Self-expression begins at once, involving all forms of drawing, and leading to appreciation. The process is creative, and the standard is individual judgement as to the fine relations.
>
> Synthesis (self-expression) is the center of effort, with the sciences as aides . . . The beginning and the end is the relation of forms to spaces, not the copying of anything.

Since Dow's time the synthetic or self-expression method has been gaining momentum. Extremists, and certain teachers affected by European methods, go so far as to refuse to apply any method of teaching other than what seems to come spontaneously from the pupil. Hoffman, in the *Encyclopaedia Britannica*, said,

> . . . the artistic sense cannot be acquired by instruction; it can only be awakened and fostered. The qualities on which an art teacher's value depends are the power to recognize artistic talent where it exists, and the desire to respect it as a rare phenomenon.

This and other extreme views and the practices resulting from such a philosophy will naturally cause the pendulum to swing back again. Somewhere between the extreme academic method and the extreme synthetic method must be a wholesome mean. Good drawing results from trained judgement probably more than from making copies yet all creative work has been built upon a mental stock which was drawn from many sources and many experiences. The genius lies in making the new combinations and these are subject to fundamental principles of art. It is not careful observation and self-imposed discipline in training that is to be condemned but the degeneration of art teaching to routine and formalism.

To overcome routine and formalism in the teaching of drawing it is most valuable to have "live" problems—problems with a real meaning

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[6]James P. Haney: "Art in the Schools." *A Cyclopaedia of Education,* 1919 Edition, Vol. 1-2, p. 227.

[7]Arthur W. Dow: "Art, Method of Teaching." *A Cyclopaedia of Education,* 1919 Edition, Vol. 1-2, p. 230.

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and a real application. This is particularly true in the upper school levels. The difficulty of teaching is increased but only as drawing is used as a tool—a means to an end rather than an end in itself—does it become really significant. Function then becomes a key-word in all drawing instructions.

FUNCTION AS A CONTROL IN DRAWING METHODS

The technique of "function analysis" has been rich in its contribution to curriculum revision. I used this approach in determining how drawing functions in the presentation of ideas in common reading mediums such as newspapers and magazines.[8] In this study it was found that drawing divides itself into seven categories each requiring teaching methods peculiar to its class.

When drawing is considered as an aspect of art in everyday life it requires distinctly different methods of expression, let us say, of a poster artist or show-card writer. If the function is to interest pupils in nature or to develop their powers of observation, as is sometimes claimed, a wholly different type of method will be involved. Training for expression, observation, and appreciation as Farnum[9] reported it, will require distinctly different methods to achieve each of these ends. If the function of drawing shall be the development of creative work having an application to specific fields of endeavor, the field will determine both content and method, that is to say, method in its final analysis is but a way of achieving a goal. This has been partially recognized by some educators. The effort to determine best methods has led to considerable experimental work.

EXPERIMENTATION AS A MEANS OF DETERMINING DRAWING METHODS

Among some of the earlier experimental work done, especially relating to methods in drawing, is the work entitled *How Children Learn to Draw*[10] and Ayers' study[11] as well as his report in the *18th Yearbook* of the National Society for the Study of Education. We are beginning to accumulate enough evidence that we no longer need to grope so much concerning methods and content. Some of these things can be or have been determined experimentally as to their value, as for example in Digby's[12] *Comparative Study of Two Methods of Teaching Drawing*. This study is highly specific and gives us the definite answer that

> . . . it is more effective to teach the reading of drawing to beginning drawing students by making isometric

[8]O. A. Hankammer, *Content of High-School Drawing* (unpublished Master's thesis, The Ohio State University, Columbus, Ohio, 1930). Chap. V.

[9]Royal B. Farnum: *Present Status of Drawing and Art in the Elementary and Secondary Schools of the U. S.* Washington: Bureau of Education, Bulletin No. 13, 1914, p. 31.

[10]Walter Sargent, and Elizabeth E. Miller: *How Children Learn to Draw*. Boston: Ginn & Co., 1916.

[11]Fred C. Ayers: *The Psychology of Drawing with Special Reference to Laboratory Teaching*. Baltimore: Warwick and York, 1916.

[12]Edwin E. Digby: *A Comparative Study of Two Methods of Teaching Drawing* (unpublished Master's thesis, The Ohio State University, Columbus, Ohio, 1933), p. 51.

drawings from orthographic drawings than it is to teach reading of drawings by making orthographic drawings from isometric drawings.

Such experimentation, when the information becomes known, will prevent confused thinking by showing that method is quite subordinate to the emphasis given the new device that is being exploited.

The experimental method has shown the validity of the instruction-sheet as a device in the teaching of mechanical drawing. The field of drawing, because of its ramifications, has been examined from the scientific point of view more extensively than any of the other subjects in the arts if the number of theses and dissertations is an acceptable criterion.

Another interesting approach to the study of method in the teaching of art, and experimental in nature, is the work being done in certain progressive schools. Most of the work may be characterized as being exceedingly liberal as compared with the traditional school. The following quotation from L. Young Correthers' chapter entitled "The Development of Creative Impulses in Art Classes" gives an insight as to methods used in these schools.[13]

> The one thing insisted upon is sincerity, the only thing demanded as to technique is that it must be straightforward, not muddled, and must show a conscious seeking after color pattern and significant living form. There are those who cannot at first evolve original forms. These are encouraged to take some natural living form and, selecting a portion of this, use it as a starting point. Sometimes when no idea comes to the worker, the actual handling or playing with the material results in a suggestion.

This method is distinctly of the synthetic rather than the academic type. The results seem to bear out Dow's contention that the synthetic approach is the better from the standpoint of developing creative ability and appreciation. The academic method makes for technical skill and formal organization of subject matter. Such factors seem to be considered of less value at the present time. Judd, in commenting on the trends in education in his survey, remarks that the recent trend in methods seems to be away from formal organization, some going to the extreme of having no organization of subject matter as such.[14] The implications and results of such practices and procedures may have far-reaching effects.

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[13]G. Hartman, and A. Shumaker: *Creative Expression.* New York: The John Day Co., 1932. p. 25.

[14]Charles H. Judd: *Problems in Education in the United States.* New York: McGraw-Hill Book Co., 1933. p. 98.

COMMENTS ON BOOKS

Adaptations of Instruction to Individual Differences in The Preparation of Teachers in Normal Schools and Teachers Colleges

By Carleton D. Mason

Bureau of Publications, Teachers College, Columbia Univresity, 1940

There are many provocative suggestions in this monograph, the avowed purpose of which is "to determine the extent to which teachers' colleges have adapted their instruction to the individual differences of their students, in comparison with steps taken in this direction by some of the liberal arts colleges." On the basis of a survey of the literature in the field the author compiled a list of "adaptations," such as honors courses, conference periods, sectioning, exemptions from class, group work within the class, and option of units within the course. He then questioned administrators, instructors, and students in a number of teacher training institutions concerning the extent to which such devices were being used in their schools and with what effectiveness.

There is no attempt to make a literal comparison of liberal arts and teacher training colleges in their use of the various techniques. The emphasis is rather upon the advantages and disadvantages of the adaptations as reported by those who were questioned, ways in which they were used, difficulties encountered in making use of them, and bases determining the selection of the devices to be used. There is also a chapter on "Student Opinions of the Techniques," which will be of interest to anyone who has ever experimented with any of the methods.

Needless to say, the author comes to the conclusion that none of the techniques are used as extensively or as effectively in teachers' colleges as might be desired, but then this is also true in the liberal arts colleges from which he takes his cue, as he himself admits. It appears that teachers' colleges should be at least as progressive as other institutions in the matter of teaching methods, however, and if the devices mentioned by the author have any value (and there is good reason to believe that they do) some of his suggestions might well be taken to heart. At least there would seem to be no harm in trying out some of the devices he mentions, in the interest of varying the classroom bill of fare if for no other reason. However, instructors using the techniques claim that they raise the level of student achievement as well as of interest.

Paul Murphy

Creative Teaching

F. Theodore Struck

John Wiley & Sons, Inc., New York 1938

Creative Teaching is not an assemblage of instruction or project sheets dealing with the latest materials, tools, or fantastic creations. It is a volume which carries over to the industrial arts and vocational education fields the general professional standards and techniques with particular reference to the specific fields.

As the author states in his preface, "the book is addressed to prospective teachers and to teachers in service who are striving toward professional goals not yet realized and toward standards not yet attained. . . . Democratically conceived education must come to grips with all important phases of life and must spring from an integration of all these areas of learning."

The book in itself is an example of "creative teaching" in that it is carefully planned and outlined. The topics are logically developed, and a good measure of integration of the subject matter is reflected throughout the work.

One cannot read the book without the realization that he has been privileged to acquire a comprehensive view of psychology, educational procedures, tests and measurements, and personality development.

Some of the ideas which suggest the author's concept of creative teaching include:

The development of judgment is a necessary step in developing outstanding ability;

Uncritical thinking is the foe of creativeness;

There is a fundamental difference between mastery of details and slavery to them;

Thinking can be constructive as well as critical;

Creative imagination makes the seemingly impossible attainable;

Creative education through self-discovery and self-activity is open to everyone;

The creative impulse is a "pearl of great price;"

Great art, both fine and practical, is always creative;

Creative teaching is done at the expense of released personality.

Creative Teaching does not attempt to answer with finality the many problems discussed but leaves the reader free to draw his own conclusions. In this he is helped by a long list of supplemental readings at the end of each chapter. The author presents the problem of teaching the practical arts as one which is a constantly growing and evolving group of carefully evaluated ideals, values, and goals.

Laurence G. Cutler

The Invasion From Mars

Hadley Cantril, assisted by Hazel Gaudet and Herta Herzog,

Princeton University Press, 1940

The public reaction to Orson Welles' radio presentation on October 30, 1938, of *The Invasion From Mars,* a play based on H. G. Wells' *War of the Worlds,* will undoubtedly go down in history as one of the most incredible events of modern

times. Not content to wait for the verdict of historians, however, Dr. Hadley Cantril, psychologist of Princeton University, together with some of his associates, decided that a close-up view of the event might be interesting as well as valuable for the light it would shed on man's psychology. The machinery for carrying out such a study had already been set up at Princeton University in the form of a radio research project financed by the Rockefeller Foundation, of which Dr. Cantril was an associate director. Hence, he and his cohorts set out to interview as many people as possible who had been frightened by the broadcast. Their findings together with the complete script of the broadcast are set forth in this book.

The book makes interesting reading. A perusal of the radio script makes the reader wonder that more people were not frightened by its realism. Of course, it was clearly stated several times during the broadcast that the events being reported were purely fictitious, but the results of the survey indicate that many people tuned in at times that prevented them from hearing these announcements. This being true, it was probably only the natural acumen and skepticism of many people that prevented the panic from being more widespread.

The authors of the study are particularly interested in relating various characteristics of the persons interviewed to their acceptance or rejection of the broadcast as an authentic report of actual events. As might have been anticipated, the results indicate that the more gullible listeners were drawn from the lower economic, educational, and intellectual levels. The correlation between these factors is not perfect by any means, but the trend is unmistakeable. Personality factors and the presence of other people were also found to be influential in the determination of the individual's behavior in this situation.

As a matter of fact, Dr. Cantril is inclined to account for the mass panic in terms of the influence of the turmoil and unrest of the world in which we live today on the personality adjustments of the subjects interviewed. It will be remembered that this broadcast followed close on the heels of a war crisis in Europe, which, along with an accumulation of other bewildering events at home and abroad during the past decade, undoubtedly created in the minds of many people the feeling that "anything can happen." As Heywood Broun said in his column not long after the event, "The course of world history has affected national psychology. Jitters have come home to roost." Whether this is the true explanation of the phenomenon or not, it is an intriguing one and one that most readers will feel that they can confirm from their own experience.

Paul Murphy

Your Wings and *Through The Overcast*

By Assen Jordanoff

Funk and Wagnalls Company, New York, 1939.

For centuries man has looked up into the sky and dreamed of the day when he would be able to conquer the space above the surface of the earth. Only 37 years ago Orville Wright made the first successful flight in a heavier-than-air machine. In the last few years great strides have been made in the development of air transportation. In this country aviation is experiencing a more rapid growth than any other industry has ever enjoyed. On January 1, 1940, there were approximately 27,000 licensed pilots in the United States. By January 1, 1941, there will be twice that number. The plan of the national defense program calls for 70,000 licensed pilots by the end of 1941. Every person in this country is interested, either directly or indirectly, in flying. We are fast becoming a nation of aviators. Everyone should familiarize himself with the fundamentals of flying. As a layman or as a student flier, you will be interested in reading these two books.

An important part of the airman's training takes place on the ground, where he learns the theory of flight, gains an understanding of the construction of the airplane and its engine, and becomes familiar with the controls and instruments. Of course flying cannot be learned from the printed page. However, a careful study of the material presented in these two books will give you a good background of information that will be very helpful when you start flight training.

In *Your Wings,* the author describes the mechanics of the plane, the operation of the controls, and the actual procedure of the take-off. The method of handling the plane in the air is next described. The use of the stick and rudder controls in executing straight and level flight, banks and turns, and glides is explained. Landing a plane is next discussed. Bringing the plane in for a three-point landing is a very important part of the flight procedure. Every pilot must understand the operation of the flight and engine instruments. These individual instruments are described in detail. Radio communication and radio beam flying are fully discussed.

The mechanics of controlling the plane are more or less simple and can be learned by the average individual in a few hours. But a study of the atmosphere and weather conditions is quite another problem. Because weather is so important to flight, a large part of *Through The Overcast* is devoted to this subject. Important as it is to know how to fly, it is also important to know when not to fly.

These books are cleverly and profusely illustrated. Jordanoff believes that a good illustration is worth pages of descriptive material. His dumb pilot, Cloudy Joe, is quite an interesting character and commits all the blunders in the category of flying.

Harry V. Hartman

Contributors to This Number

William T. Bawden (Ph. D., Teachers College, Columbia University) came to Kansas State Teachers College as guest professor in the 1933 summer session and became head of the department of industrial and vocational education in September, 1935. He is a charter member of the Mississippi Valley Manual Arts Conference, of which he has been chairman since 1914. He was a member of the editorial staff of *Industrial Education Magazine*, published in Peoria, Illinois, from 1909 until it was discontinued in November, 1939, and was managing editor from 1928 to 1935. For the past three years he has served as chairman of the committee on arrangements of the Four-State Regional Conference on problems of the industrial-arts teacher and supervisor.

Earnest W. Baxter (M. S., Iowa State College), associate professor of industrial and vocational education, has been a member of the department staff at Kansas State Teachers College since 1921. His work at Iowa State College included minors in architectural engineering and mechanical engineering. Before coming to Pittsburg he had nine years of experience in industrial arts in Augusta and Parsons, Kansas, including five years as head of the department in Parsons. He has had considerable practical experience in the metalworking industries as draftsman and as architect.

Elsie Leitch Bowman (M. S., Kansas State Teachers College of Pittsburg) is head of the Department of Art. She is a graduate of Chicago Art Institute where she also completed one year of postgraduate study and served as instructor. She spent two summers of study and travel in Europe, and taught in the city schools of Pueblo, Colorado, and the State Teachers College, Oshkosh, Wisconsin.

Leroy Brewington (M. S., Kansas State Teachers College, Pittsburg) is assistant professor of industrial and vocational education and supervisor of printing in charge of the College School of Printing. He had five years of practical journeyman experience in newspaper and job-printing plants in Independence and Herington, Kansas. For nine years he served as supervisor of printing and teacher of vocational printing in the Pittsburg Senior High School. He was appointed to his present position on January 1, 1935.

Walter L. Friley (M. A., University of Wichita), assistant professor of industrial and vocational education, entered the old Manual Training Normal School as a student in the fall of 1906. Continuing his work in summer sessions he graduated in May, 1919. From 1907 to 1940 he was employed in the industrial education department of the city schools of Independence, Kansas, the last 20 years as director. He served as guest instructor at the College for three summer sessions, being appointed to his present position in September, 1940. He served three terms as president of the Kansas Industrial Arts Association, having served two terms as treasurer. He also served one term as president of the Kansas Vocational Association, and two terms as president of the Southeast Kansas Industrial Education Association.

Otto A. Hankammer (Ph.D., Ohio State University) is professor of industrial and vocational education, in general charge of instruction in drafting. From 1917 to 1919 he served overseas in the Signal Corps, AEF, as instructor, and as master signal electrician. He has had art training under private instructors, was a free-lance artist for several years, and has had experience as an industrial draftsman and designer. He served two terms as president of the Kansas Industrial Arts Association and one term as president of the Kansas Vocational Association. He also served as chairman of one industrial-arts session at the San Francisco convention of the American Vocational Association, December, 1940.

Bertha A. Spencer (M. A., Columbia University, New York City) is associate professor of art, Kansas State Teachers College of Pittsburg. She spent one year of travel and study in a number of art centers in Europe as a member of the New York University Tour under the leadership of Lorado Taft and John Shapely. She is a member of the National Society of Designer-Craftsmen and of Kappa Delta Pi.