A CONTEMPORARY STUDY OF PROFESSIONAL TERMS
IN
INDUSTRIAL ARTS AND VOCATIONAL EDUCATION

A Thesis Presented for the
Degree of Master of Arts

by

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The Ohio State University
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Approved by:

[Signature]

OHIO STATE
UNIVERSITY
ACKNOWLEDGEMENTS

Nomenclature is peculiar in that it is a result of the association and interdependence of people. Any study of terminology must therefore be built upon the willingness and ability of others to assist and cooperate. Accordingly, the writer wishes to gratefully acknowledge the splendid and willing assistance given him by those associated with this study.

The inception of the present research is credited to Dr. William E. Warner. Only through his encouragement, constructive criticism and helpful suggestion has it been possible. Through his efforts and the interests of officers of the Western Arts Association, this present study was presented before the "Manual Training" section of the Association at Louisville and $100.00 was appropriated for its continuance during 1931-1932. All of this is most sincerely appreciated.

The writer wishes to express gratitude for the willing assistance of Dr. William H. Stone, Dr. Robert E. Smith and to his fellow students, DeWitt Hunt, Burl N. Osburn, Rudolph L. Schwanzle, Ralph W. Sharp and to those others who so kindly took part in the final jury study.

And finally, a most deserving acknowledgement of the valuable aid so willingly given by his wife through her typing, and general assistance during the study.

August 22, 1931                      E.W.B.
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Part One

BASES FOR THE STUDY OF PROFESSIONAL TERMS
Chapter I

CONFUSION OF PROFESSIONAL TERMS IN
INDUSTRIAL ARTS AND VOCATIONAL EDUCATION

Cooperative enterprises for all time have been dependent for their success upon the ability of individual expression and interpretation, or the exchange of ideas. The "Tower of Bable" was abandoned because of the multiplicity of tongues, the inability to exchange ideas. This might suggest that the success of any cooperative enterprise is successful to the extent that its members are able to discriminate, to draw distinctions, to exchange ideas accurately and efficiently. The idea has been expressed that the status of a profession may be determined by the development of its terminology. Medicine, one of the oldest of the professions appears to be an excellent illustration of this principle.

A comparatively new profession must necessarily adapt the layman's terminology even though clumsy and awkward for the purpose. Professional growth is thus handicapped. There is a general feeling that Industrial Arts and Vocational Education are now laboring under such a handicap. Imagine, if the reader can, what condition would exist if a dictionary of the English language had never been compiled. Reflection on this point may be a most startling revelation; and yet, this is exactly the situation one finds in the "profession"
of Industrial Arts and Vocational Education. These fields have no dictionary. Only forty-seven of the three hundred eighty-eight terms investigated in this study appear in Webster's International Dictionary. It seems that confusion, misinterpretation and wasted effort are to be expected.

The appointment of a terminological committee by the "Manual Training" Section of the Western Arts Association at the annual convention of the association in 1929 at Cleveland, marked the beginning of a scientific study of terms in the fields of Industrial Arts and Vocational Education. The committee with Dr. William E. Warner as chairman, proceeded to outline the following program of researches as an approach to the problem:

1. A master list of professional and scientific terms.
2. An etymological study of the terms set up in the master list.
3. A historical study of the first professional uses of these terms.
4. A study of the contemporary usage of the terms in the master list.
5. An analysis of the terminological confusion among 358 shop teachers in Ohio.
7. A study of the philosophic demands of certain terms.
8. A study of the views of leaders.
9. Analysis of individual reactions to the findings presented.
10. Recommendations for the selection and use of terms.
During 1929-30, H. H. Hutchinson, a graduate student at Ohio State University, carried on the first two of the list of researches in the list just presented. In his study he established a master list of 817 terms of which 675 were included in the etymological study. The results of this research were given as part of a progress report of the committee at the 1930 meeting of the Association held at Minneapolis, Minnesota.

The central problem of the present thesis, then, is to note confusion in professional nomenclature and to attempt a solution by employing certain of the techniques suggested in THE WESTERN ARTS ASSOCIATION'S investigation. (see page 2). The use of techniques involving an analysis of contemporary usage, the listing of further terms in the "master-word list" and the reaction of leaders to the findings are all suggestive.

Confusion as Evidenced in the Writings and Published Articles of Leaders.

The reader of Industrial Arts and Vocational Education literature soon becomes aware of the existant confusion of professional terms. This confusion is evidenced in two ways, first, the various contradictory uses and interpretations implied by the authors and, second, by direct statements calling attention to the existing confusion and a need for clarification. The latter is expressed by Snedden who writes (50-534)

"Education is still largely in the 'prescientific' stages of its development. As a consequence, it derives its terms and
symbols almost exclusively from the everyday vernacular of the people. But the terminology thus developed necessarily lacks in definiteness and consistency. No two speakers on a given subject will be found to use terms derived from the popular language in exactly the same sense. Great confusion and waste of effort thus result.

The time has not yet arrived for educators to do what has been done in the fields of medicine, engineering, scientific agriculture, and other fields of applied science - that is develop a technical terminology consisting of new terms and symbols coined for the purpose, and giving exact and unvarying meanings. In education it will be necessary for some time to continue to use, in the main, the old familiar words and phrases, with their numerous variations of meaning and their almost unlimited special connotations.

But educators can do this: They can agree to use certain words and phrases for the time being in certain definite ways and with certain consistent meanings, and when making departures from this usage clearly indicate the grounds and extent of their divergence from the meaning agreed upon.

To this end there is required a series of definitions of the terms most frequently employed in education, and furthermore, such an extended analysis, with abundance of concrete illustrations, as will show to anyone acquainted with educational thought actually what is meant by the nomenclature thus established.

Snedden, in calling attention to existing confusion has indicated a need for terminological studies. He likewise suggests the form which such studies might take. Other writers also seem to recognize and call attention to existing confusion.

Unfortunately, the terminology for the different industrial subjects lacks general acceptance and universal adoption; consequently certain obvious confusion has resulted because of the different designations used in various school systems. (30-315)

The writer has in mind one session of a recent convention where serious personal misunderstandings arose, much time was lost, and serious confusions were developed and perpetuated because of the confusion of industrial arts, industrial education, industrial art, industrial training, and two types of industrial schools, in the minds of both speakers and audience. The resulting sarcastic newspaper reports were a bad thing for all concerned in the development of these phases of education. (37 - 58)
Great confusion has resulted in the past from the variety of terms used to designate handwork in the schools, both in general and vocational education. This confusion is just as great among teachers in these two branches of education as among other school people and the public.

(19 - 54)

Other examples of confusion are found in the misuse or misinterpretation of terms in light of the usual connotation or in widely varying usages in the writings of authors. Several examples follow which have been found in the published works examined.

Industrial School: A school for training pupils in the Industrial Arts; often specific, such a school for young persons committed to it by legal proceedings. (58 - under Industrial School)

In Detroit this term Vocational Education is used as a name for the department which supervised trade work, technical education, industrial arts, mechanical drawing, and home economics. (21 - 23)

The following courses of study are taught in the shop of an elementary school: 1. Manual Arts for the fifth and sixth grades; 2. Household Mechanics; 3. Mechanical Drawing for Elementary Schools. (21 - 23)

At the beginning of the eight grade students are offered a choice between three curriculums. 1. Practical Arts; 2. Commercial, and 3. Language. (21 - 27)

Prevocational Education: An aim or objective of the Manual Arts, namely to explore or try out occupations with the thought of later intelligent occupational selection. (19-55)

Prevocational Education: Education originally intended to assist retarded children to choose their occupations and prepare for more specific trade training or entrance to manual training, commercial, or mechanic arts high schools. (26 -394)

Prevocational School: Opportunity School; Elementary Industrial School; Special School: A school for those whom the regular public school have failed to reach, the unadjusted or 'misfit' pupil. (57 - 82)

Home making education includes those forms of Vocational Education whose controlling purpose is to train for home making and the non-wage earning occupations connected with
the household. (39 -)

Vocational education is that education which fits for
profitable employment. (23-6)

That type of training which results in successful placement
in the trade for which the student has been trained. (12-34)

Industrial Arts. Different types of handwork used in the
elementary grades, such as textile work (weaving, basketry
etc.) claywork (plaster, concrete etc.) Simple metal work,
or simple projects in agriculture. (23-7)

Industrial Arts. That type of educational experience where-
in sufficient relative time and direction are given that it
may serve the needs of those boys who have definitely
decided to enter industry upon leaving school, or may
supplement the experience of those already at work in
industry. (20-47)

Innumerable examples might be given but these may
suffice to demonstrate the point that a striking amount of
confusion exists even among the leaders in the field. It
should be recalled that these examples come from the pro-
fessional literature representing views and interpretations
of writers. An examination of the interpretations of shop
teachers may prove to be even more startling.

Confusion As Evidenced by the Results of a Study of 358
Shop Teachers in Ohio.

Attention has been called thus far to the confusion of
professional terms shown by published writings. This
is assumed to represent confusion among "leaders". It
might be expected that still greater confusion exists
among the shop teachers. Warner (16-5) in a study of 358
"shop" and "drawing" teachers in Ohio, points out that
twenty eight different general terms were used to designate
the kinds of work being done. Attention is also called to
one of the central states where the shopwork of one
thousand teachers is referred to by twelve different terms:

**Confusion As Evidenced by the Discussion of Leaders from Direct Observation.**

During the 1930 meeting of the MISSISSIPPI VALLEY "MANUAL ARTS" CONFERENCE, of the heads of departments in schools where "shop" teachers are prepared, the writer made note of the time lost due to lack of common understanding of certain professional terms. Careful check revealed that three hours and twenty minutes was lost in fourteen hours of discussion time through failure of a mutual understanding of such terms as, "handyman activities", and others.

Conversation with others has revealed confusion among such terms as, **Industrial Education, Industrial Arts, Vocational Education, Industrial Arts Education, Industrial Training, Manual Arts and Manual Training.**

Observations in Seminar classes also indicated confusion of these and other terms by students in the course of their discussions. These classes seemed to render a valuable service by assisting students to draw distinctions that permitted them to discriminate between terms commonly misunderstood or misused.
Other Terminological Studies Pointing to Confusion.

Hutchinson in his *Etymological Study of Certain Professional and Scientific terms in Industrial Arts and Vocational Education* (5: 7-10) gives quotations and historical references to show examples of confusion and variation in usage and devotes a chapter to "The Need for Studies in Terminology". English, in his preface to his *Dictionary of Psychological Terms* which incorporates 2000 terms and definitions has this to say, (3):

A good textbook should (and some do) carefully define all technical terms as these are introduced. But once the student leaves the covers of the single textbook, whether to dip into technical journals or into semi-popular and popular literature, he finds confusion, vagueness, and down-right ambiguity of usage, or the casual assumption that a term, actually highly technical will be understood by the reader.

There is little doubt that the mere vocabulary difficulty is a chief stumbling-block in the way of understanding of psychology.

Dr. H. C. Warren of Princeton, with an advisory board of seven will bring out in the near future a *Dictionary of Psychology* which will be about the size of a desk Webster. Several other studies will be noted in the bibliography.

In the field of Industrial Arts and Vocational Education two studies have been completed, Hutchinson's Etymological study (5), previously referred to, and to Crispin's empirical treatment, a *Dictionary of Technical Terms*, now published. Several other studies are now under way. One, being sponsored by the "Manual Training" section of the Western Arts Association, another by a state committee in
Alabama under the direction of E. W. Walker and a third by a research committee of the Industrial Education Association in Michigan.

These and others not listed give an idea of the consciousness that exists of confusion of terms and the need for clarification. Warner made the following statement in the 1931 report of the Committee on Terminology to the "Manual Training" section of the Western Arts Association (13).

The need for clarification is increasingly apparent with the growing intricacy of the 'practical' in education.

An examination of the definitions in Appendix "B" of this study reveals additional evidence of agreement and disagreement in interpretation of terms. This may be even more striking when it is kept in mind that these definitions are the interpretations of the leading writers in the fields of Industrial Arts and Vocational Education.

Confusion Seen in Indexes and Catalogue Classifications.

Any student of Industrial Arts or Vocational Education soon becomes aware of the difficulties associated with periodical and book indexes and library classifications of published material in this field. An examination of the United States Catalogue of Books in Print Jan. 1, 1928 reveals the following publications appearing under the heading of Manual Training:
Sargent, W.  Fine and Industrial Arts in Elementary Schools.
Siedel, R.  Industrial Instruction
Snedden, Warner.  Reconstruction of Industrial Arts courses.
Bonser and Mossman.  Industrial Arts for Elementary Schools.
Dopp, K. E.  Place of Industries in Elementary Education.

Manual Arts as the heading for a grouping does not appear in the classification and Industrial Arts heads a group of such publications as the following:

Hill, H. C.  Wonderbook of Knowledge
Husband, J.  America at Work
Spon, E.  Mechanic's Own Book
Williams, A.  How It Works
Williams, H.S.; and E. R.  Wonders in Science in Modern Life

Under Industrial Education is found:

Farum, R. E.  Manual Arts in New York State.

The Readers Guide to Periodical Literature shows no less confusion in classification and is of little additional service in locating published articles. Under the heading Industrial Arts in the issue of January 1929 to June 1930 is found:

Little, A. H.  In Good Taste
Sprackling, H.  "Modern Art and the Artist" House Beautiful.
N.  "Modernism For Sale" American Mercury.
N.  "Decorative Modernism" The Nation.

No distinction is made between the terms Manual Arts Manual Training and Industrial Arts. All are classified
under the heading Manual Training.

If a librarian were asked to show one the Congres-

sional Library classification or the Dewey classification, an
examination would show little distinction between the terms
in question. These examples and many many more might be
sighted as evidence of need for terminological studies
in Industrial Arts and Vocational Education. The statement
of this need is in itself an indication of the purpose of
this study.
Chapter II

PURPOSES OF THE STUDY

The preceding chapter cited a series of examples of confusion in the professional terms common to Industrial Arts and Vocational Education. Such confusion is not analyzed far before certain needs develop. These come with recognition that a problem exists and that a solution is desirable. The present study approaches such a solution with the following purposes:

1. The determination of those terms that are most confusing.

2. The determination of a technique for the clarification of meanings of individual terms.

3. The determination of those words, if any, which should be abandoned.

4. The recommendation of distinctions that will aid in the clarification and usefulness of certain terms.

5. To note attitudes of individuals toward their professional nomenclature.

6. The establishment of a technique for evaluating terms and definitions.

7. The formulation of a list of professional terms used in Industrial Arts and Vocational Education for study.

Terms That Confuse.

An examination of the examples of confusion in Chapter One seem to indicate that a large portion of misuse and misinterpretation centers about a very few terms; at least certain terms appear to cause more confusion than others.
Evidences of hazy distinctions occur more frequently for such terms as Vocational Education, Technical Education, Manual Arts, Industrial Arts, Manual Training, Prevocation- al Education, Practical Arts, Mechanic Arts, and Industrial Education. Hutchinson in his study (5-9) cites similar terms as the ones most commonly misused and misunderstood. Noting the degree of confusion will aid in bringing to light those terms necessitating the greatest amount of study and effort.

The Meaning of Individual Terms.

Terms may cause misunderstanding, as different meanings are read into them other than those intended by the author. A clarification of meanings would seem to remove in a large measure the difficulties described and illustrated in Chapter one. Several different or perhaps a combination of, techniques might be employed to arrive at an accurate interpretation of these terms. Based on the assumption that the greatest service may be rendered to the student and prospective teacher by a list of professional terms and definitions, this study attempts to establish a technique by which this may be accomplished.

Terms Which Should Be Dropped.

A new "profession", in developing its professional terminology, may easily introduce and use certain terms that fail to withstand critical examination. Warner points out in the Louisville Report (13-19) that while the term
Manual Education has been introduced on the West coast, it is doubtful if one can "educate the hand without reference to the rest of the body", manual being derived from the latin word "Manus" meaning hand. It seems entirely possible that a term may be used in a manner far removed from its usual or original connotation and that it frequently cannot be justified either etymologically, historically, philosophically or psychologically. Terms are seemingly coined, occasionally without careful analysis, and others have come to carry connotation far removed from the logical meaning, hence the purpose of determining those terms that might well be abandoned.

Clarifying Distinctions Between Certain Terms.

When an attempt is made to clarify meanings of terms certain distinctions may become more evident than formerly. The terms Vocational Education and Vocational Training appear to be examples of this. As the meanings of "education" and "training" are clarified, it may become less difficult to discriminate between these words and hence the terms in which they are involved. As similar situations develop it may prove to be desirable to point out and recommend certain distinctions as a purpose of this study.

Attitudes of Professional People Toward Nomenclature.

The illustrations of confusion and need for terminological studies in Chapter I reveal varying attitudes on the part of individuals toward their professional vocabulary. To knowingly label a phase of work with a term entirely
unsuited to the purpose represents an attitude. To carefully define all questionable terms when used in a text is another. It seems most natural that in the course of a study such as this, many and varying attitudes will be expressed both personally and in the writings of individuals. Assuming that the attitude of a profession in general will be some index to possible procedures and values of a complete terminological investigation, it becomes a purpose of this study to observe and note varying individual attitudes and reactions.

Preparing A List For Study.

Scattered through the professional literature of Industrial Arts and Vocational Education there occasionally occur individual attempts to clarify certain professional terms in which the writer is particularly concerned. Brewer¹ in one of his books lists 18 professional terms and their definitions. Hutchinson in his etymological study compiled, as a part of his thesis, (5-17) a master list of 817 professional and technical terms. As far as the present study has been able to determine, Hutchinson's list is the only one that has ever been attempted as such. It does not, however, attempt to list the professional and the technical terms separately. Since the present study is concerned with the use and misuse of professional terms, it has as one purpose, the formulation of a list of purely professional terms.

The formulation of any list of terms necessarily implies the need for selection. What determines whether a given term is peculiarly a professional one? The answer to this question seems to suggest the need for measures or criteria for the purpose of selection.
Chapter III

CRITERIA FOR THE SELECTION AND INTERPRETATION
OF TERMS USED IN THIS STUDY

One of the purposes of this study (see page 12) is to prepare a comprehensive list of professional terms. This implies the need of criteria of selection. Such terms as formal teaching, gainful occupation, inventiveness, manual labor, motor experiences, equipment etc., may become border line cases, and as such require careful scrutiny for purposes of classification. To draw these distinctions requires a formulation of criteria.

Criteria for the Selection of Terms.

Attention has been called on page 3 to Hutchinson's master list (5-17) of technical and professional terms. This list however does not attempt to distinguish between the professional and technical terms, in that both are arranged alphabetically in a single list. The present study requires the formulation of a list/strictly "professional" terms. This was accomplished by asking the following five graduate students attending the Ohio State University and Dr. Warner to check through Hutchinson's list of technical and professional terms (5-17) indicating by an "x" those terms they believed peculiarly professional:
Professor DeWitt Hunt  
Oklahoma Agricultural and Engineering College  
Stillwater, Oklahoma.

Herbert H. Hutchinson  
Cleveland Public Schools. Cleveland, Ohio.

Burl N. Osburn  
Sioux City Public Schools. Sioux City, Iowa.

Professor Rudolph Schwanzle  
Kansas State Teachers College. Emporia, Kansas.

Professor Ralph W. Sharp  
Alabama Teachers College. Florence, Alabama.

Dr. William E. Warner  
Ohio State University. Columbus, Ohio.

They were also requested to write down any reasons, why any one term was, or was not, included in their professional list.

The results of this preliminary study served two purposes, one, as a beginning list of professional terms for the investigation and, two, as a basis for the determination of criteria that could be used for selecting additional terms. The different reasons the jurors recorded were listed and grouped resulting in the following criteria which were used in selecting additional terms in the fields of this study:

1. Those terms that are distinctly peculiar to the profession. (shop work, part-time school etc.)

2. Those terms that have their origin within the profession (Manual Arts, Industrial Arts, general shop etc.)
3. Those common terms that have come to have a special or peculiar connotation when used professionally, (demonstration, project, instruction sheet, etc.)

4. Those terms which have come to have a different meaning, professionally, than the definition in the English dictionary, (model, placement)

5. Those terms which are composed of one or more words which do not occur in an unabridged English dictionary. (Agricultural Arts Education, Coordinator).

6. Proper names, such as those of individuals, organizations, departments, general movements in the history of the profession etc., shall not be considered a part of this study.

7. Those terms which tend toward the obvious and colloquial shall not be included.

Restriction of the Terms of the Study

An effort was made to restrict the terms included in this study to those used professionally by the teacher, the supervisor and the professor of Industrial Arts and Vocational Education. It seemed necessary that this group should determine, in a large measure, their professional terminology. They may then approach something of a common agreement rather than become still more confused through the introduction of new and unintelligible terms by others.

Recency of Interpretation.

Many terms of long standing have been altered in their meaning from time to time in the light of changing conditions.
This study was concerned with the determination of the generally accepted interpretation of the term today, whether it retains its historical meaning or assumes a new one. It might be stated here, however, that in cases where agreement seemed to be lacking that this study should attempt to give an interpretation based on historical, psychological and etymological considerations. When the interpretation of any writer was being considered an effort was made to obtain the most recent one available.

**Federal Interpretation of Terms in Vocational Education.**

The Federal interpretation of certain terms in Vocational Education as defined under the Smith-Hughes Act was accepted as far as possible unless too great a disagreement with other findings of this study existed. Definitions published by the Federal Board for Vocational Education have had wide circulation and seemingly general adoption. Definitions used by the Federal Board were adopted on the recommendation of the Society for the Promotion of Industrial Education. These were formerly determined and adopted by the Society through the efforts of a terminological committee in 1914. Possible changes in distinctions drawn for the terms in question over a period of seventeen years makes it seemingly unwise to accept these definitions as final without further evidence.

**The Use of the Singular Form of the Term.**

The singular form of any term was used in listing terms for the study such as: **vocational school**, **short-unit course**,
skill, etc. This was done, however, only when the professional interpretation remains unchanged by such a selection. For example, the term Industrial Arts when reduced to the singular form Industrial Art takes on an entirely distinct and wholly different professional meaning. Much the same holds true for similar terms as: Manual Arts, Laboratory of Industries, Consumers Needs, Home Economics, etc.

The formulation of these criteria established a basis for the selection and classification of the terms already listed as well as additional terms that may appear from time to time. Before actual study of the terms take place it seems advisable to establish as complete a working list of terms as possible.
Chapter IV

LISTING THE TERMS OF THE STUDY

The preliminary list of professional terms was determined by a jury study of the 817 terms found in Hutchinson's list (5-17). This is briefly described in Chapter III, page 17 of this report. The results of this preliminary study revealed a wide variation of understanding among specialists as to what constitutes a "professional" term. The following table for example, shows the number of terms from the list of 817 which were checked as strictly professional by each juror.

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<td>Oklahoma Agri. &amp; Mech. College</td>
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<td>Furl H. Osburn</td>
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<td>Rudolph Schwanzle</td>
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<td>Ralph H. Sharp</td>
<td>Alabama State Teachers College</td>
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</tr>
<tr>
<td>William E. Warner</td>
<td>Ohio State University</td>
<td>182</td>
</tr>
</tbody>
</table>

Attention should be called to the wide variation in the number of terms selected, the range being from 76 to 338. The present study makes the assumption that a term should be a descriptive connotation of an idea and a "professional" term is any term that has been adopted by, or originated within, the profession to describe a philosophy, a program, a subject, a movement, an organization, a method, or an element of the profession.
Establishing a Preliminary List of Professional Terms.

Terms in Hutchinson's study which were checked by three or more of the jurors, were selected as a beginning list of terms for this study.

It next seemed evident by examination of this list that some terms were not included. In order to insure a more complete compilation, over one hundred sources of published material were searched and terms selected in the light of the criteria established. The examination for additional terms was made in representative magazines, textbooks, and the reports and publications of organizations. Terms were added as they appeared from time to time during the progress of the study. A final list was compiled consisting of 388 terms appearing in this report as appendix "A".

Examination of Published Articles for Professional Terms.

Published articles appearing in the three professional magazines listed below, were examined for a period of one year, 1930. This material was assumed to represent a contemporary picture. The periodicals examined were:


**Industrial Arts and Vocational Education.** Bruce Publishing Company, Milwaukee, Wisconsin.

**Vocational Guidance Magazine.** Harvard University, Cambridge, Massachusetts.
Examination of Textbooks for Professional Terms.

Several textbooks representing various fields of specialization in Industrial Arts and Vocational Education, were also examined. In order to reduce the labor necessary in checking a book only every other page was scanned, e.g. all the odd numbered pages. This method allowed for an adequate sampling of all sections of the book equally. A check of every page of two books failed to add a sufficient number of terms to those already found to warrant the time necessary to use such a technique. The textbooks examined are as follows:

1. Bennett, Charles A. History of Manual and Industrial Arts up to 1870. (3)
2. Bonser, and Mossman. Industrial Arts for Elementary Schools. (7)
3. Friese, John F. Exploring the Manual Arts. (19)
4. Hill, David S. Introduction to Vocational Education. (24)
5. Lee, Edwin A. et.al. Objectives and Problems in Vocational Education. (30)
6. Payne, Arthur F. Administration of Vocation Education (36)
7. Snedden, David S. Vocational Education. (51)
8. Snedden, Warner, et.al. Reconstruction of Industrial Arts Courses. (52)
9. Vaughn and Mays. Content and Methods of Teaching Industrial Arts. (56)
10. Warner, William E. Policies in Industrial Arts Education. (18)

Additional Terms Found in the Reports of Organizations.

The reports of three professional organizations were
examined as a possible source of terms not already listed. Each page of such publications was scanned because of the small number of reports available, and because of the condensed form in which most of them were printed. The reports examined were as follows:


Western Arts Association Bulletin. Thirty-Sixth Annual Convention Report, Minneapolis, Minn., 1930.


Selection of the Final Word List to be Studied.

Verification and determination of the final list to be studied, was obtained through a second jury study. The words selected from the Hutchinson list together with those found in the present study were listed alphabetically. This list with directions for the selection of terms, and a list of the criteria as previously determined for the selection, was given to each of the following individuals serving as a jury:

Elroy W. Bollinger  University of North Dakota
DeWitt Hunt  Oklahoma Agri. & Mech. College
Burl N. Osburn  Iowa City Schools
Ralph W. Sharp  Alabama State Teachers College
Rudolph Schwanzle  Kansas State Teachers College
Robert E. Smith  Ohio State University
William E. Warner  Ohio State University

Only those terms which were selected as professional by four or more of the jurors, were used to constitute the final work-list of 388 terms. This list appears in appendix "A" of this report. These terms have been alphabetized in
accordance with the method used in Webster's New International Dictionary of 1918.

The procedure just described, completed the preliminary step of obtaining a working list of professional terms. The major part of the study now presented itself; namely to conduct a search for published definitions of the terms listed and to develop a technique for the study of these terms through definitions.
PART TWO

INTERPRETATION STUDIES OF PROFESSIONAL TERMS
Chapter V

BIBLIOGRAPHICAL STUDY FOR PUBLISHED DEFINITIONS.

Objectifying procedures is a goal of all research, to build on fact rather than opinion. Published definitions are concrete and specific examples, in part, of an individual's effort to express himself. A study of specifically stated definitions reduces the subjective element of the research worker to the minimum. Accordingly this study has limited its investigation of contemporary interpretation of terms to published definitions.

Previous Studies.

It may be interesting before proceeding to examine previous terminological studies as a possible source of definitions in this and related fields. English's Dictionary of Psychological Terms (3) defines but six terms appearing in the master list. The Report of the Committee on Terminology in Art for the Federated Council on Art Education (12) and Odell's Glossary of Three Hundred Terms Used in Educational Measurement (9) offers nothing more. Crispin's publication (2) is an empirical treatment confined entirely to "technical" terms. Hutchinson's research (5) while dealing with many terms common to this study is concerned with "etymology"; this may have little, or no bearing on the present connotation. It became necessary, therefore, to turn to other sources for possible definitions of professional
terms. The present study has set for itself, as already stated, the problem of determining the possibility of arriving at an acceptable interpretation through the examination of published definitions.

Textbooks, Reports and Published Articles as a Source of Stated Definitions.

All available, textbooks, and published reports, dealing with, or related to Industrial Arts or Vocational Education, were carefully searched for specifically stated definitions of 338 terms previously listed. As definitions were found, they were listed together with their sources under the term they attempted to describe. Several published articles occurring in periodicals were also examined for stated definitions, however, the number found did not warrant extensive investigation of this source. Implied definitions or interpretations were not considered since such interpretations when rewritten by another are subject to question as to the original meaning intended by the author. On the other hand, stated definitions become more objective, allowing little opportunity for the subjective element to enter in especially on the part of the one making the study.

It was questioned at the outset of this study whether or not published definitions would be found in sufficient numbers, for all terms, to be of value in arriving at a correct interpretation. This has proved to be true with many of the terms occurring in the master list. Three hundred fifty-one (351) definitions were found for two hundred three (203) of the 388 terms comprising the master
list. Of the 203 terms for which published definitions were found only 64 have two or more definitions. All terms for which definitions were obtained are listed in Appendix "B", together with the definitions and their sources.

The sources of all definitions found, 61 in all, are listed in a separate bibliography, Appendix "C". In the search for definitions much additional material was examined but it has not been listed except when one or more definitions were found occurring in its contents. Altogether, something over 100 books and pamphlets were carefully scrutinized.

Dictionary Definitions of Professional Terms.

One criterion used in the selection of terms was that of the dictionary definition. If the professional interpretation and use of a term was no different than that given in a standard dictionary, it was not to be included for study. As a check, and for further distinction, a Webster's International Unabridged Dictionary was examined for every term. It was found that only 47 of the 388 terms listed, appeared in the dictionary. The published definitions appearing in Appendix "B" seem to indicate that as many as one half of these have a professional connotation different from the one usually accepted. The situation appears to indicate in a measure the absolute helplessness of an individual seeking to clarify his thinking regarding professional terminology. It might be likened unto the condition the English speaking people would find themselves if no dictionary of any kind existed.
A dictionary may be considered valuable in so far as it attempts to state the ideas intended to be conveyed by the term. Difficulty arises when the individual using the term, has in mind certain ideas which differ from those of the person interpreting the term. Hence, it is seemingly obvious that clarification must come through agreement on the ideas to be expressed and interpreted in any given term.
Chapter VI

CONCEPTS AS BASES FOR DETERMINING THE MEANING OF A DEFINITION

Ideas expressed or implied by any term may be spoken of as concepts. Thus, such a term as Industrial Arts implies certain concepts. It is the variation in these concepts among individuals that produces the confusion discussed and illustrated in Chapter I. The term Industrial Arts, for example, should be used only when it attempts to describe the ideas or concepts that the speaker has in mind. The term LABORATORY OF INDUSTRIES describes the concepts that Warner had when he introduced this term as a name for a form of "shop work" in a school setting. Laboratory expresses the idea of a place to experiment, develop, and create. Industries infers that various forms of industrial work are represented. Thus the LABORATORY OF INDUSTRIES might easily be interpreted as a place where opportunity is offered to experiment, tryout and explore certain basic industries found in the modern world.

Concepts Involved in a Definition.

It has been inferred and demonstrated that a term should be a descriptive connotation of an idea. The definition of a term accordingly becomes an elaboration, a more specific statement of the idea or ideas in the form of concepts that lie behind the term. Hence a definition can be more objectively and more intelligently studied and discussed if it is
broken down into the specific concepts or ideas incorporated in it. As an example, Selvidge in his book *How to Teach a Trade* (48) defines "skilled worker" as

The worker in the modern manufacturing plant possessing a high and intensive, but not extensive degree of skill within the range of his task, having a small amount of responsibility.

An examination of this definition reveals the following concepts or ideas expressed by the author:

1. A "skilled worker" is a worker in the modern manufacturing plant.
2. He possesses a high and intensive degree of skill within the range of his task.
3. He does not possess an extensive degree of skill.
4. He has a small amount of responsibility.

Thus a definition can be analyzed for the concepts it contains, in other words, a list of the ideas present in the mind of the author at the time of writing. A definition therefore becomes more valuable and intelligent to the extent to which it is analyzed for its concepts.

**Analysis of Definitions for Their Concepts as a Basis for Further Study.**

The present study assumes that the analysis of definitions for concepts produces a more intelligent interpretation of the author's ideas. All the definitions in this study have been so treated. The concepts involved in definitions of each term have been grouped under that term without reference to the source from which it came. Thus
there is built up for each term a list of concepts representing the ideas expressed by different authors in their stated definitions. It is a list of concepts many of which may or may not properly belong to the term. Every concept evident in a definition has been included. Many are contradictory and several so "glittering" in generality as to be of little value in their interpretation.

The remaining problem became one of selecting concepts which more properly describe or interpret the term. The concepts which receive final selection may then be regrouped to form a new definition, or the statement of concepts in complete sentence form.

Selection of Terms for Further Study.

The present study had as one purpose the establishment of a technique for the evaluation of the concepts involved in any one term. Examination however revealed that few terms have sufficient published definitions to warrant further study without obtaining a more complete interpretation, through other sources. Based on these findings eighteen terms were selected over which greatest confusion seemed to exist and for which a sufficient number of definitions had been found to warrant further study. These terms together with their definition and concepts are given in Chapter VII as an example of the technique established in this research.
Chapter VII

DETERMINATION OF FINAL CONCEPTS THRU A JURY STUDY

Attention has been called in the preceding Chapter to eighteen terms having a sufficient number of published definitions to warrant further study. An effort to establish a technique for later application has been stated as one purpose. Among the several techniques that were considered, the one of using a selected jury appeared most promising. Other methods considered would have involved more time and a much greater expense without the assurance of more valid results. Accordingly a jury of twenty men was selected as described in the following paragraphs.

Selection of the Jury

Several factors were considered in the selection of a jury to evaluate the concepts listed for each of the eighteen terms. Geographic distribution was considered, that colloquialisms and local interpretations might be avoided or at least minimized. Thought was given to the Professional preparation and experience of each juror. The major interest and position of the individual was considered to provide adequate representation for the different phases of work covered in this study. Since the entire terminological investigation originated, and has been conducted, in cooperation with the "Manual Training" section of the Western Arts Association, several men prominent with this group were
asked to assist in the work. A list of those, whose aid
was solicited, are as follows:

1. Charles H. Bailey, Iowa State Teachers College, Cedar
   Falls, Iowa.

2. Dr. William T. Bawden, Industrial Education Magazine,
   Peoria, Illinois.


4. Dr. M. A. Bigelow, Director of the School of Practical
   Arts, Teachers College, Columbia University.

5. Mr. Elmer W. Christy, Board of Education, Cincinnati,
   Ohio.

6. Professor G. B. Cox, Oregon State Agricultural College,
   Corvallis, Oregon.


8. Professor John F. Friese, In charge Industrial Education
   Course, University of Wisconsin, Madison, Wisconsin.

9. Dr. Edwin A. Lee, University of California, Berkely,
   California.


11. Dr. George E. Meyers, Professor of Vocational Education
    and Guidance, University of Michigan, Ann Harbor,
    Michigan.

12. Dr. Louis V. Newkirk, University of Iowa, Iowa City.

13. Professor Robert W. Selvidge, University of Missouri,
    Columbia, Missouri.

14. Dr. Homer J. Smith, University of Minnesota, Minneapolis,
    Minnesota.

15. Dr. David Snedden, Teachers College, Columbia University,
    New York City.

16. Dr. William H. Stone, Ohio State University, Columbus,
    Ohio.

17. Dr. William E. Warner, Ohio State University, Columbus,
    Ohio.

18. Professor F. C. Whitcomb, Miami University, Oxford, Ohio.

19. Harry E. Wood, 5215 College Avenue, Indianapolis, Indiana.
The Jury Study Using Eighteen Terms.

Each member of the jury received a letter stating the purpose of the study and requesting his assistance. Enclosed with the letter was a check list, composed of all concepts grouped under their respective terms and a statement of directions explaining the method of checking each concept. A copy of the letter, the directions, and an example of the word list follow:
(JUROR'S LETTER)

Columbus, Ohio
June 1, 1931.

Professor ................
........................
........................

My dear ................:

The "Manual Training" Section of the Western Arts Association is conducting a study of professional and technical terms in Industrial Arts and Vocational Education. One part of this study is now nearing completion; namely the determination of the contemporary use and misuse of professional terms and their ultimate clarification.

A list of professional terms has been determined by a preliminary study. All available published material has been searched for stated definitions which have been listed. The definitions for each term have been analyzed for the concepts involved and both have been grouped under the term they describe.

The concepts contained in such a list as just explained, represent varying and perhaps conflicting or confusing ideas. The task remains to select those concepts or ideas which serve best as an interpretation of the term.

I am taking the liberty of asking you together with a few other leaders, to aid in this selection. Enclosed, you will find listed a few of the terms which seem to cause considerable confusion, together with directions for checking them. Your assistance in this undertaking of the association will be much valued and appreciated. Trusting I may hear from you at your earliest opportunity and that you will find checking the enclosed list to be most worthwhile, I am

Very sincerely yours,

ELROY W. BOLLINGER.

In charge of the Investigation of Professional Terms.
(CHECK LIST FOR JURY STUDY*)

Terminological Study of the "Manual Training" Section of the Western Arts Association.

Below are listed eighteen terms and their concepts found in a search of published definitions of these terms. All concepts have been included whether generally accepted or not. Three places opposite each concept are provided to check your evaluation with reference to the term it attempts to explain, i.e., if the concept is in keeping with your interpretation place the check mark in the left hand column; if you are uncertain as to its inclusion check the middle column; and if the concept definitely falls outside the term, in your mind, place a check in the right hand column.

A special effort should be made to avoid "glittering generalities". Space is provided for any additional specific concept you feel should be involved in a definition of the term under consideration; e.g. if "Used in the lower grades" is specified under "Industrial Arts" you may desire to add "Used in the High school" or some other statement to make your interpretation complete.

<table>
<thead>
<tr>
<th>COMMERCIAL EDUCATION</th>
<th>Published Concepts Involved</th>
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<tbody>
<tr>
<td>correct</td>
<td>incorrect</td>
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</tbody>
</table>

*See page 43 for continuation of this list.
Replies were received from all the jurors except the following:

1. Mr. Charles A. Bennett, Manual Arts Press, Peoria Ill.

2. Dr. M. A. Bigelow, Director of the School of Practical Arts. Teachers College, Columbia University, New York.

3. Dr. Edwin A. Lee, University of California, Berkley, California.

4. Dr. David Snedden, Teachers College, Columbia University, New York.

Several interesting reactions of the jurors were received both in personal letters and as notations on the check sheets. These statements of professional interest have been recorded and commented upon in Chapter IX under the discussion of "Professional Attitude toward Terminology".

Results of the Jury Study.

It seemed desirable, as a means of clarification, to list the eighteen selected terms together with all the material used in the study for each term. Accordingly on the following pages will be found, each term, followed by its definitions, the concepts involved, and the jury reaction. The jury reaction is indicated by the total number of votes occurring in any one of the three columns headed "correct", "uncertain", and incorrect.

One method of indicating the combined reaction on any one concept is through the use of an index number. Such a number may be arrived at by determining the percent of those voting "correct" of the total number of jurors voting
"correct" or incorrect. e.g. Under the term General Shop eight jurors voted "correct", and two jurors voted "incorrect" for the concept, "A School Shop", or a total of ten jurors voted in these two columns. Eight tenths, or the number voting "correct" over the total of ten, is a percentage of 80 in favor of the concept being expressed in the term General Shop. This procedure may raise a question about the consideration of those checking the column headed "uncertain". Perhaps it is fair to assume that any juror checking a concept in this column does so because he does not feel well enough informed to say it should be correct or incorrect. Perhaps, the term may be confused in his mind to the extent that he does not care to commit himself one way or the other. Such an attitude on the part of a juror would seem to indicate a state of openmindedness, if not entire willingness to conform, to the conclusions of others as a group. Accordingly, it might be concluded that the key men on any one concept are those with definite convictions in some one direction. They represent the immediate forces that must be dealt with.

The method of rating just described, however, should not be allowed to belittle the value of the column marked "uncertain". A large number of jurors checking an item as "uncertain" would seem to indicate a need for further investigation, or, for other criteria before it will be possible to accept or reject an item. The concept "under control of a single teacher", referring to General Shop, has four votes as "correct", six as "uncertain", and two
as "incorrect". The percentage rating is 66 in spite of the fact that as many jurors were "uncertain" about the concept as were of definite conviction. A part of this uncertainty may be traced to the vagueness of the concept as stated on the check list. Perhaps all the jurors might be in agreement if the concept was interpreted to mean that one teacher should always be in charge of a given shop and that one or more assistant teachers could be employed if necessary.

Thus it seems that two possible interpretations might be placed on those terms involving a large proportion of uncertain votes, one, the concept may be one upon which there is no general conviction, and, two, the concept may be so stated as to be misleading in itself. All data gathered in the study have been supplied, however that the reader might satisfy himself regarding any further conclusions which may be drawn.
DEFINITIONS, CONCEPTS, AND JURY VOTE OF EIGHTEEN SELECTED TERMS.

COMMERCIAL EDUCATION

1. Courses dealing with specific phases of practice or knowledge applicable in, or derived from, the commercial callings, as accountancy, bookkeeping, commercial law, industrial history, history of commerce business arithmetic, stenography, business practice, etc. (50-587)

2. Includes those forms of vocational education whose controlling purpose is to train for wage earning or to advance the power of wage earning in such business and commercial pursuits as bookkeeping, clerical work, stenography, typewriting and salesmanship, etc. (39- )

Concepts Involved in the Above Definitions.

Percentage correct incorrect uncertain

1.00 12 1 Courses dealing with specific phases of practice or knowledge, applicable in, or derived from commercial callings.

.9 10 1 1 Trains for wage earning.

.92 11 1 1 Trains to advance the power of wage earning.

1.00 13 1 A form of vocational education.

1.00 14 " accounting

1.00 14 " bookkeeping

1.00 13 1 " commercial law

.12 11 1 1 " industrial history

1.00 14 " history of commerce

1.00 14 " business arithmetic

1.00 14 " stenography

1.00 14 " typewriting

1.00 14 " salesmanship

GENERAL SHOP

1. A broad group of educative industrial arts activities embracing technics of shop organization and teaching method which enables a community whether large or small, to present a unified core of content based on life needs as summarized in these aims: developmental experience interpretative of the major
phases of the world's industrial work, "handy-man" activities, consumer's knowledge and appreciation, guidance, hobbies, social habits, and (for a very small percent) vocational preparation. (34-190)

2. The term "general shop" is correctly used for a school shop that is organized and equipped to give instruction in two or more types of shop work, such as woodwork and metal work, all under the control of a single teacher. (55-214)

3. A shop so organized, equipped and manned that several distinct kinds of industrial-arts training are given to a group of students by one teacher. (54-492)

Concepts Involved in the Above Definitions.

Percentage

<table>
<thead>
<tr>
<th>correct</th>
<th>incorrect</th>
<th>uncertain</th>
</tr>
</thead>
<tbody>
<tr>
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<td>8</td>
<td>3</td>
</tr>
<tr>
<td>1.00</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>0.57</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>0.92</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

- A school shop
- A broad group of Industrial Arts activities
- Content based on "life" needs.
- Developmental experiences interpretive of the major phases of the world's industrial work.
- Involves handyman activities.
- Gives consumers knowledges and appreciations.
- Has guidance value.
- Offers two or more types of shopwork.
- Under control of a single teacher.
- Educative
- Adaptable in various forms to any size community.
- Involves hobbies.
- Involves social habits.
- Furnishes vocational preparation.

INDUSTRIAL ARTS

1. Industrial Arts is a study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes. (7-491)

2. Different types of handwork used in the lower grades, such as textile work (weaving, basketry, etc.) clay work (plaster, concrete, etc.) simple metal work, or simple projects in agriculture. The purpose of this type of work is to introduce the pupil to the various great industries or groups of occupations of mankind
as a matter of general education without either vocational or prevocational motive. (23-238)

3. Industrial Arts as a school subject is the distilled experience of man in his resolution of natural materials to his needs for creative comfort to the end that he may more richly live his spiritual life. A culture study with the emphasis upon the how and why of industrial operations, combined with a real appreciation of industrial life. (37-293)

4. A study of the changes man makes in materials to increase their values to meet needs, of the appropriate usage of products made, and of the social advantages and problems resulting from the working of these changes and products. (46-367)

5. Industrial Arts is a part of general education consisting of series of activity experiences carried on thru the medium of handwork (including manual training, shop work, drawing, school and home gardening, household arts) designed to assist the individual to an appreciation of the means and methods by which society accomplishes its work. (1)

6. Any line of work with tools in which the vocational aspect is not emphasized including the elementary and intermediate schools and industrial mechanics courses in academic high schools. (21)

7. A study of industry from the social as well as the material side, a cultural study with the emphasis upon the how and why of industrial operations, combined with a real appreciation of industrial life. (61-)

8. That type of educational experience wherein sufficient relative time and direction are given that it may adequately serve the needs of those boys who have definitely decided to enter industry upon leaving school, or may supplement the experience of those already at work in industry. (20-229)

9. A field in which we 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. The main purpose being to give information and training with respect to industrial facts and processes that will tend to promote and establish habits of thought and action that will be of value to the individual without respect to his future vocation. (50-111)
Concepts Involved in the Above Definitions.

Percentage correct incorrect uncertain

.85 11 1 2 Different types of handwork.
.77 10 1 3 Used in the lower grades.
.86 12 2 Used in intermediate grades.
.77 10 1 3 As textile work (weaving), clay work, (plaster, concrete) simple metalwork, simple agricultural products
.85 11 2 2 Introduces the pupil to various great industries.
.69 10 2 4 Introduces the pupil to various groups of occupations of mankind.
.87 13 2 General education without vocational or prevocational motive.
.82 9 2 2 School subject.
.89 8 4 1 A cultural study.
1.00 12 3 Emphasis on how and why of industrial operations.
.92 12 1 1 Appreciation of industrial life.
.92 12 1 1 Study of changes man makes in materials to increase their value.
.92 10 1 1 Appropriate usage of products made.
.85 11 1 2 Includes manual training.
1.00 14 " shopwork.
1.00 14 " drawing.
.86 2 3 9 " school and home gardening.
.09 1 2 10 " household arts.
.67 8 2 4 " mechanics' courses in academic high school.
.85 11 1 2 A study or industry.
.91 10 3 1 A study or the social advantages and problems, resulting from changes made by man in materials.

INDUSTRIAL ARTS EDUCATION

1. Includes those forms or training and study based upon industrial pursuits and designed to enhance general intelligence and give vocational guidance in the field of industrial occupations. (51-587)

2. A form of practical arts education which concerns itself with education definitely related to those manifold practical activities of mankind that are distinctly industrial in character, extending from the first grade through senior high school and beyond including such activities as manual training and mechanic arts instruction. (54-492)
Concepts Involved in the Above Definitions.

Percentage correct incorrect uncertain

.83 10 1 2 Forms of training and study based upon industrial pursuits.
.92 12 1 A form of practical arts education.
.73 8 1 3 Offers vocational guidance in the field of industrial occupations.
.75 9 1 3 Includes such activities as manual training and mechanic arts.
.73 9 2 3 Extends from the first grade through the senior high school and beyond.
.77 10 3 Definitely related to those manifold practical activities of mankind that are distinctly industrial in character.
1.00 1 The preparation of teachers for industrial arts subjects.
.92 12 1 Teacher preparation for the Industrial Arts.

INDUSTRIAL EDUCATION

1. Includes those forms of vocational education whose controlling purpose is to train for wage earning or to advance the power of wage earning in the trades, industries, and in the household. (39)

2. Any form of education that has for its purpose the preparation of an individual to follow more effectively a trade or industrial pursuit, and which is of less than college grade. (13)

3. Industrial education includes those forms of vocational education the direct purpose of each of which is to fit the individual for some industrial pursuit or trade. (37-293)

4. A form of vocational education; educational training for the entrance into and pursuit of any industrial trade. (19-412)

5. Those schemes of education by which individuals are trained in occupations in the manufacturing industries. (30-451)

6. Vocational work in the trade and manufacturing fields, as well as all those various phases of educational work which make use of the materials, tools, and methods of industry for educational purposes, whether for general or specific ends. (56-397)
7. Forms of practical or technical training, based upon operations characteristic of some industry. (51-587)

8. Vocational education within the field of industry specific training in industry. (43-89)

9. A training of the hand in the use of tools or in manipulation and treatment of material; the acquiring a body of useable knowledge of greater or less extent, relating to industrial processes, conditions, organization, and administration, the gaining of some skill in the use of such knowledge; the securing of mental, aesthetic, and ethical training through the work of tools and material and in acquisition and use of the knowledge indicated. (22)

10. That form of vocational education that aims to prepare definitely for wage earning employments of a trade or industrial nature; or that aims to assist persons already employed in industry to increase their trade or special knowledge and skill. (54-492)

Concepts Involved in the Above Definitions.

<table>
<thead>
<tr>
<th>Percentage correct</th>
<th>incorrect</th>
<th>uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>.92 11 2 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.83 10 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.60 6 3 4</td>
<td>Less than college grade.</td>
<td></td>
</tr>
<tr>
<td>.78 7 4 2</td>
<td>For either general or specific ends.</td>
<td></td>
</tr>
<tr>
<td>.45 5 2 6</td>
<td>Controlling purpose to train for wage earning.</td>
<td></td>
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<tr>
<td>.73 8 3</td>
<td>To advance the power of wage earning.</td>
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</tr>
<tr>
<td>1.00 10 2</td>
<td>in the trades.</td>
<td></td>
</tr>
<tr>
<td>1.00 10 2</td>
<td>in the industries.</td>
<td></td>
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<td>.38 3 3 5</td>
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<td>.92 11 2</td>
<td>Based upon the operations of some industry.</td>
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<td>.85 11 2</td>
<td>The acquiring of a body of usable knowledge relating to industrial processes, conditions, organization, and administration.</td>
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<td>.83 10 1 2</td>
<td>The gaining of some skill in the use of industrial knowledge.</td>
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<td>.92 11 1 1</td>
<td>Deals with the manufacturing industries.</td>
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<td>1.00 12 2</td>
<td>Makes use of materials, tools, and methods of industry.</td>
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<td>.75 9 1 3</td>
<td>Training of the hand in the use of tools and the treatment of material.</td>
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INDUSTRIAL TRAINING

1. Industrial training is a narrow form of education and includes training only in the manipulative skills of a mechanical vocation. (37-293)

2. Those courses which lay definite hold upon the vocational motive of pupils, which give more time to handwork than manual-training courses give, and which sooner or later provide specialized and intensive training for industrial pursuits. (41-315)

3. An appropriate education for the industrial worker including all features, technical, general, inspirational and recreational. (28-245)

Concepts Involved in the Above Definitions.

Percentage

correct incorrect uncertain

.92  11  1  1  A narrow form of education.
.75  9  1  3  Training only in the manipulative skills of a mechanical vocation.
.78  7  4  2  Devotes more time to handwork than the manual training course.
1.00  12  1  Sooner or later provides specialized and industrial training for industrial pursuits.
.83  10  1  2  Education for the industrial worker.
.38  3  4  5  Includes all features, general, technical, inspirational, recreational.
1.00  2  Lays definite hold upon the vocational motive of pupils.

INSTRUCTION SHEET

1. An instruction sheet consists of written or printed directions for performing a job or piece of work, or information related to the work. (44)

2. An instruction sheet consists of a sequential numbered arrangements of steps necessary to perform the specified job or complete a project. (37-293)

3. A teaching device used to supplement demonstrations by serving as a source of reference. (19-412)

4. A general term applied to written or printed instructions, quite generally issued in loose-leaf form. (49-263)
5. A broad, inclusive term that includes all of the various forms of individual loose-leaf sheets that are commonly referred to under such designation as: operation sheets, job sheets, project sheets, information sheets and assignment sheets. (55-214)

Concepts Involved in the Above Definitions.

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A teaching device.
Consists of written or printed directions.
Tells how to perform a job or piece of work.
Gives information related to the work.
Gives a sequentially numbered arrangement of steps necessary to complete a specific job.
A general term applied to written or printed instructions.
Supplemental to the demonstration.
Serves as a source of reference.
Generally in the loose leaf form.
Includes job sheets.
project sheets.
operation sheets.
assignment sheets

MANUAL ARTS

1. Manual arts training in the lower grades is that form of practical arts education in which boys and girls usually during the work of the first six grades have practice with a variety of exercises or projects resembling projects carried on in practical life. (37-293)

2. A training for appreciation of things industrial, good for all pupils without regard to their probable future work in life. (20-229)
Concepts Involved in the Above Definitions.

Percentages correct incorrect uncertain

.82  9  2  2 Form of practical-arts education.
.90  10  2  1 Boys and girls take part.
.45  4  5  5 First six grades.
.90  8  3  2 Practice with a variety of exercised or projects.
.78  7  3  2 Projects resemble those carried on in practical life.

MANUAL TRAINING

1. The woodworking shop work of an Americanized sloyd type which is now so common in the elementary schools of the country. It is sometimes used also to indicate the shop work in the general high school, which consists chiefly of simple cabinet-making projects and often includes printing and metal-working. (23-238)

2. The education of the mind thru the hand by giving the pupil a general acquaintance with the mechanical and constructive activity; having for its object general education. (37-293)

3. Handwork instruction based on the theory of formal instruction. The name for American Handwork corresponding to European term, "Sloyd". (19-412)

4. The general education of the individual, through the hand whatever his vocation is to be. (41-315)

5. Training to develop a skill of hand and eye, and an attitude of mind which will serve as a foundation for special technical training at a later stage.

6. A course in handwork dealing with elementary industrial processes which have a place in industrial life, and which provides problems in handwork in a material which the pupils can handle successfully taking account of skill in its inventory of educational and industrial values. (10-99)

7. The training of physical, intellectual and normal activities through the use of tools and materials, together with a practical knowledge of these tools and materials and their uses for such a development of power as will enable the individual thus trained easily to modify his manual work, acquire the use of new
tools, and the proper treatment of new material; an appreciation of the dignity of manual labor when controlled and treated by mental activities to ends definitely useful. (22)

8. Any form of constructive work that serves to develop the powers of the pupil through spontaneous and intelligent self-activity. The power of observation is developed through exacting demands of the senses, the reason by constant necessity for thought before action, and the will by the formation of habits of patient careful application. (29-330)

9. Any form of constructive work that serves to develop the powers of the pupil through spontaneous and intelligent self-activity. (29-330)

10. Training of the hand or hands to do work; applied to; a training of boys to use tools, instruction in the principles of wood working, metal working etc., being given by the actual performance of the various operations. (59-2620)

Concepts Involved in the Above Definitions.

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Concepts Involved in the Above Definitions. (continued)

Percentages  
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| .36 | 6 | 5 | 1 | Formation of habits of thought before action, will, patient careful application. |
| .67 | 8 | 1 | 4 | Develops pupils through spontaneous and intelligent self activity. |
| 1.00 | 11 | | Without regard to vocation. |
| .75 | 6 | 4 | 2 | Training of physical, intellectual, and normal activities. |
| .89 | 3 | 3 | 1 | Applies to the training of boys. |

PRACTICAL ARTS

1. Practical arts is a generic term and includes those practical forms of school activities which are pursued as a part of general education, such as manual training, manual arts, industrial arts,loyd, arts and crafts, and other school subjects, such as household arts, agricultural arts, commercial arts. (37-293)

2. A designation for a group of special educational subjects, namely, manual arts, homemaking, agricultural and commercial arts. (19-412)

3. Those school (or school-initiated) activities in which pupils, by more or less simulating productive processes in the adultwork of the world, make, construct, grow, or otherwise, through concrete performance, produce articles or service-effects analogous to those produced for, and exchanged in, the markets of men. (52-143)

4. A term used quite generally throughout the eastern states to designate all those non-vocational lines of work for both boys and girls whose purpose is to give those contacts and experiences with the practical work of the world which are demanded by the ideals of general education. The term, therefore, includes industrial Arts, agricultural arts, commercial arts, household arts, etc. (56-297)

5. Practical Arts is a part of general education consisting of series of activity experiences carried on thru the medium of handwork (including manual training, shop work, drawing, school and home gardening, household arts) designed to assist the individual to an appreciation of the means and methods by which society accomplishes its work. (1)
6. The purpose or general objective of the practical arts is the same as that of general education, being taught for their cultural values. Under these general objectives as established, we find manual training, manual arts, industrial arts, sloyd, the part-time general continuation shop, primary handwork, arts and crafts. (36-354)

Concepts Involved in the Above Definitions.

Percentages

correct incorrect uncertain

| .92 | 11 | 1 | 1 | A group of special educational subjects. |
| .82 | 9  | 2 | 2 | Non-vocational lines of work. |
| .93 | 13 | 1 | 1 | For boys and girls. |
| 1.00 | 13 | 1 | To give contact and experience with practical work. |
| 1.00 | 14 |  |  | Has cultural values. |
| 1.00 | 13 | 1 |  | Has consumer values. |
| 1.00 | 12 | 2 |  | A generic term. |
| .86 |  | 2 | Pursued as general education. |
| .91 | 10 | 3 | Practical forms of school activities. |
| 1.00 | 2 |  | Concrete performance. |
| 1.00 | 13 | 1 | Make, construct, grow. |
| .85 | 11 | 1 | 2 | Produce articles or service-effects analogous to those produced for, and exchanged in, the markets of men. |
| 1.00 | 11 | 2 | Assist the individual to an appreciation of means and methods by which society accomplishes its work. |
| 1.00 | 13 | 2 |  | Appreciational values. |
| .77 | 10 | 2 | 3 | Objectives same as general education. |
| .87 | 13 | 2 |  | Education through the medium of handwork. Includes |
| 1.00 | 14 |  | Industrial Arts. |
| .92 | 12 | 1 | 1 | Agricultural Arts. |
| .92 | 12 | 1 | 1 | Commercial Arts. |
| .85 | 11 | 1 | 2 | Household Arts. |
| 1.00 | 13 | 1 | Drawing. |
| 1.00 | 12 | 2 | Shopwork. |
| .77 | 10 | 3 | Part-time general continuation shop. |
| .93 | 15 | 1 | Manual Training. |
| .93 | 15 | 1 | Manual Arts. |
| .85 | 11 | 2 | Sloyd. |
| 1.00 | 11 | 2 | Arts & Crafts. |
| .82 | 9  | 2 | 2 | Homemaking. |
| .91 | 10 | 2 | 1 | Home gardening. |
| .83 | 10 | 1 | 2 | Primary handwork. |
PRACTICAL ARTS EDUCATION

1. The general term for non-subsidized Smith-Hughes subjects, of a manipulative nature, such as: Agricultural Arts, Agricultural Mechanics, Domestic Science, Household Arts, Industrial Arts, Manual Training, Household Mechanics, Woodwork, Machine Shop, Sheet Metal, Automobile Mechanics, Commercial Arts. (53)

2. A broad inclusive term that embraces as subjects of instruction, Manual training, industrial arts, mechanic arts, household arts, domestic science, domestic art, general agriculture, and general commercial education. (54-492)

Concepts Involved in the Above Definitions.

Percentages

correct incorrect uncertain

.83 10 2 Non-subsidized Smith-Hughes subjects.
.92 11 1 Manipulative nature.
.92 12 1 A broad inclusive term.
.82 9 1 2 Subject of instruction.

Includes:

.83 10 2 Manual training.
.91 10 1 Industrial Arts.
.91 10 1 Mechanic Arts.
.91 10 1 Household Arts.
.91 10 1 Domestic Science.
.90 9 1 1 General Agriculture.
.90 9 2 1 General Commercial education.
.83 10 2 Household mechanics.
.83 10 2 Woodwork.
.83 10 2 Machine shop.
.90 9 1 1 Sheet metal.
.90 9 1 1 Automobile Mechanics.
.89 8 1 1 Commercial Arts.

PREVOCATIONAL EDUCATION

1. Prevocational education includes any form of education designed to enable a youth to discover for which one of several possible vocations he is best fitted by natural ability and disposition, the program of instruction and practice for this purpose being based mainly upon actual participation on the part of the learner in a variety of typical experiences derived from the occupations involved. (37-293)
2. An aim or objective of the Manual Arts, namely, to explore or try out occupations with the thought of later intelligent occupational selection. (19-412)

3. Programs of instruction and training designed to assist an individual in making an intelligent choice of an occupation, through giving him opportunity to participate in a series of practical experiences related to many vocations. (51-537)

4. Study and investigation in a variety of activities which may suggest later vocational education and training in some specific field. (43-39)

5. Education originally intended to assist retarded children to choose their occupations and prepare for more specific trade training or entrance to manual training, commercial, or mechanic arts high schools. (26-394)

Concepts Involved in the Above Definitions.

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SKILL

1. By skill is meant the ability to put knowledge into action. Knowledge does not imply the ability to
create or to do. It does imply information concerning a group of subjects or a subject. Skill is the ability actually to discharge the physical responsibilities of an occupation. It is the facility with which work is done. (42-149)

2. Skill is the knowledge completing itself by enabling the individual to translate his knowledge into action.

3. The facility with which one thinks and acts. (10-99)

4. Knowledge of, and expertness in, execution or performance; practical ability in art, science, or the like power to perceive and perform; expertness; aptitude. (59-2620)

5. A thoroughly established habit of doing a thing in the most economical way, which can only be developed through drill. (50)

6. Ability, especially for some fairly complex activity. More especially, integration of well-adjusted performances. (15-)

**Concepts Involved in the Above Definitions.**

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- Ability.
- Putting knowledge into action.
- Discharge physical responsibilities.
- Concerned with an occupation.
- Facility with which work is done.
- Practical ability in art, science or the like.
- Power to perceive and perform.
- A thoroughly established habit of doing a thing the most economical way.
- Can only be developed thru drill.
- Fairly complex activity.
- Integration of well-adjusted performances.
- Facility with which one thinks.
- Knowledge of execution or performance.
- Facility with which one acts.
- Expertness in execution or performance.
- Aptitude.
TECHNICAL EDUCATION

1. A special education, the object of which is to train persons in the arts and sciences that underlie the practice of some trade or profession. (31-271)

2. The special training of persons in the arts and sciences that underlie the practice of some trade or profession. It is usual to restrict the term to the special training which helps to qualify a person to engage in some branch productive industry. (13)

3. Trade or industrial preparation that involves a regular high school education. (21)

Concepts Involved in the Above Definitions.

Percentage correct incorrect uncertain

1.00 13 A special education.
0.60 6 1 4 A special training.
1.00 11 2 Train persons in the arts and sciences, underlying practices in some trades and professions.
0.86 12 2 Helps to qualify a person to engage in some branch of productive industry.
0.67 6 4 3 Involves a regular high school education.
0.82 9 2 2 Trade or industrial preparation.

TRADE SCHOOL

1. In the real trade school the greater part of the time is devoted to shop work, with some instruction in trade drawing and trade mathematics closely related to the trade instruction. No attempt to give any instruction in the liberalizing, social, or cultural subjects. (23)

2. A school of high-school grade in which industrial curriculums predominate. (4)

3. A school devoted to drill in the theory and practice of a trade or trades. (59-2620)
Concepts Involved in the Above Definitions.

Percentage  
correct incorrect  
uncertain

1.00  13  Greater part of time spent in shop work.
1.00  14  Some instruction in related trade drawing, trade mathematics.
.50  4  5  4  No attempt to give any instruction in liberalizing, social or cultural subjects.
.91  10  2  1  A school.
.56  5  4  4  Of High school grade.
.92  12  1  1  An Industrial Curriculum predominates.
1.00  13  Devoted to the drill in theory and practice of trade or trades.

VOCATIONAL EDUCATION

1. 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.

2. The general term for agriculture, Trades and Industries, Home Economics, and Commercial (General Continuation) classes which receive Federal Subsidy. (53)

3. Vocational Education is that education which fits for profitable employment. (23-238)

4. That type of training which results in successful placement in the trade for which the student has been trained. (12-)

5. Vocational education is 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.

   Vocational education is a generic term and includes education for all the vocations in three phases: (1) skills in handling tools, materials, machines, operations, and processes; (2) related technical knowledges; (3) the social and economic relationships of the vocation. (37-293)

6. Any type of educational training planned to fit an individual to enter into and pursue a recognized profitable occupation. (19-288)
7. Every form of education and training whose controlling purpose is to fit for profitable employment. It includes education for the professions, for commercial occupations, for agricultural pursuits, for home making, for trade and industrial occupations. (56-397)

8. That form of education whose controlling purpose is to fit for useful and efficient service in agriculture, trades, and industries, or occupations connected with the household, and which is given to the individual who has already indicated an occupational aim in life, which aim this particular form of training is designed to meet. (1)

9. Educational programs which contemplate school training of less than college grade, and which relate to the humbler vocations or occupations. Such training is intended for pupils fourteen years of age and over. (28-245)

10. Any form of education whose primary and controlling purpose is to youths for specific occupations whereby men support themselves in the world of contemporary economic activity. (36-354)

11. Education in the following phases of any occupation; (a) necessary skills, (b) related knowledge, (c) social understanding of the relationships and importance of this occupation. (36-354)

12. A training for efficiency in preparation for entrance into some specific life activity which the pupil expects to follow. (20-229)

Concepts Involved in the Above Definitions.

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A generic term
Given in a school or elsewhere.
Fit individuals to pursue effectively a recognized profitable employment.
May be pursued for wages or otherwise.
Classes which receive Federal subsidy.
Training for efficiency in preparation.
Entrance into some specific life activity.
Activity which the pupil expects to follow.
An educational program (Form of education)
Education for specific occupation.
Occupations whereby men support themselves in the world of contemporary economic activity.
Concepts Involved in the Above Definitions: (continued)

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| Training which results in successful placement.
| .92     | 12        | 1         | 1         |
| Includes education for all the vocations.
| .82     | 9         | 2         | 2         |
| Skill in handling tools.
| .90     | 9         | 3         | 1         |
| Skill in handling materials, machines, operations and processes.
| .92     | 11        | 2         | 1         |
| Related technical knowledge.
| 1.00    | 13        | 1         |
| Social and economic relationships of the vocation.
| .92     | 11        | 1         | 1         |
| Student has indicated an occupational choice.
| .75     | 9         | 1         | 3         |
| Less than college grade.
| .91     | 10        | 1         | 1         |
| Pupils fourteen years of age and over.
| .55     | 6         | 5         |
| Fits for humbler occupations and vocations. Includes training and education for:
| .73     | 8         | 2         | 3         |
| Professions.
| .93     | 13        | 1         |
| Agricultural pursuits.
| 1.00    | 13        |
| Homemaking.
| 1.00    | 13        |
| Trade and industrial occupations.
| 1.00    | 13        |
| General term for Agriculture, Trades and Industry, Home Economics.
| 1.00    | 8         | 1         |
| Commercial (general continuation) classes.

VOCATIONAL GUIDANCE

1. Is the giving of information, advice, and experience which will assist the individual in choosing an occupation, preparing for it, entering and progressing in it. (40)

2. Vocational guidance is the giving of information, experience, and advice in choosing an occupation, preparing for it, entering it, and progressing in it. (27-111)

3. Vocational guidance is concerned with directing the individual, counseling him in the choice of a career, assisting him to find out his aptitudes and limitations, awakening in him thoughts of the future, showing him opportunities, and supervising his entrance and progress in industry. (9-471)

4. To aid young people in choosing an occupation, preparing themselves for it, finding an opening in it, and building up a career of efficiency and success, and to help any, young or old, who seek counsel as to opportunities and resources for the betterment of conditions and the means of increasing economic efficiency. (45-
5. A systematic effort based on knowledge of the occupations and on personal acquaintance with and a study of the individual, to inform, advise or cooperate with a person in choosing, preparing for entering upon, or making progress in his occupation. (5-308)

6. Vocational guidance is concerned with helping children to choose, prepare for, enter upon and make progress in their careers, and in furnishing children with such vocational enlightenment as will equip them to solve cooperatively the larger problems of occupational life which cannot be solved by individuals alone. (8)

7. Discovery of the capacities, interests, and abilities which fit one to prepare for a given occupation or avocation. (15)

Concepts Involved in the Above Definitions

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<th>Percentage</th>
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<th>incorrect</th>
<th>uncertain</th>
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</table>

Giving of information.
Giving of advice.
Giving of experience.
Assist in finding aptitudes.
Assist in finding limitations.
Show opportunities.
Awake thoughts of the future.
A systematic effort.
Based on knowledge of occupations.
Based on personal acquaintance and study of the individual.
Equip them to solve cooperatively the larger problems of occupational live which cannot be solved by individuals alone.
Discovery of capacities which fit one to prepare for a given occupation or avocation.
Discovery of interests which fit one to prepare for a given occupation of avocation.
Discovery of abilities which fit one to prepare for a given occupation of avocation.
To assist an individual in choosing an occupation.
To assist an individual in entering into an occupation.
To assist an individual to progress in an occupation.
To aid young and old who seek counsel regarding increasing their economic efficiency.
VOCATIONAL TRAINING

1. Training which fits for profitable employment. Obviously neither manual training, industrial arts, prevocational training, nor the junior high school can qualify as vocational training. (Smith-Hughes Law) (23-238)

2. Vocational training is a narrow form of education and includes training only in the manipulative skills of a vocation.

3. That type of vocational education which is exclusively in the acquirement of vocational skills. (36-354)

Concepts Involved in the Above Definitions.

Percentage

correct incorrect uncertain

<table>
<thead>
<tr>
<th>Percentage</th>
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<th>1.00</th>
<th>.92</th>
<th>1.00</th>
<th>.73</th>
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<td>13</td>
<td>12</td>
<td>2</td>
<td>8</td>
<td>2</td>
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</tbody>
</table>

Training.
Fits for profitable employment.
Neither Manual training, Industrial Arts, prevocational training, or junior high school training.
Narrow form of education.
Training exclusively in the manipulative skill of a vocation.
Type of vocational education.
Exclusively the acquirement of vocational skills.
Reasonable attention, to the number of checks in the "uncertain" column, may justify the use of the numerical rating scheme just described as a means of discriminating against those items not to be included in a definition. The percentage .75 may be selected as a value below which no item will be accepted for this purpose. An evaluation of the concepts for General Shop on this basis reveals that all concepts should be included in the definition except, "Content based on 'life' needs" which rates .57, "Furnishes vocational preparation" which rates .33, and "Under control of a single teacher" which rates .66. An examination of the three items for the number checked "uncertain", at least the last named, should receive additional clarification. The desire to obtain specific concepts rather than "glittering generalities" may be sufficient justification, with the jury rating, to drop the concept, "content based on life needs", from further consideration.

Assuming the technique just described for validation of concepts is sound it becomes possible to restate the accepted concepts in the form of the usual definition. Carrying out the study of the term General Shop one finds that a definition of the term based on the findings of the jury may read as follows:

**General Shop.** A school shop conducted for general educative purposes offering two or more types of shopwork or Industrial Arts experiences and adaptable in various forms to any community. It provides for developmental experiences interpretive of the major phases of the world's industrial work
and involves such things as consumer knowledges and appreciations, hobbies, social traits, and guidance.

Formulation of Final Definitions.

The jury study on concepts has been described as a possible means of validating the ideas that might be included in the definition of any given term. While it may be possible to do this for terms for which a representative list of concepts has been gathered, it fails to take into consideration other factors deserving attention in the formulation of an ultimate definition. The etymology of a term for example, or the roots that make up a term, must be given consideration if the statement is accepted "that a term should be a descriptive connotation of an idea". (See page 22 ). Likewise a final definition should be in accord as far as possible with historical and psychological inferences. This attitude and procedure appears to be in full keeping with the ideas and plans of the Western Arts Association's Terminological Committee as evidenced by the outline of researches planned. (See page 12).

It should be clear that this study has been interested in setting up a technique whereby the contemporary use of terms may be considered and included in the final draft of any definition based upon a comprehensive and objective analysis of all factors involved. But scientific value of such a study is limited to the professional attitude and knowledge of those concerned with the use of those terms.
Chapter VIII

PROFESSIONAL ATTITUDES TOWARD TERMINOLOGY

One of the interesting observations of a study like the present, is found by analyzing the various personal and group reactions. This becomes a vital consideration in a terminological study since the growth, if any results, is dependent upon the attitudes of individuals and groups. It is a postulate that open mindedness is essential, if improvement of nomenclature is to take place. To close ones mind is only to delay individual and professional growth.

The Attitude of Organizations to Terminological Investigations.

During the twenty-second Mississippi Valley "Manual Arts" Conference held at Columbus, Ohio on December 12, 13, 14, 1931, the subject of terminology was suggested to the program committee as a possible topic to be discussed at the next annual meeting scheduled for Urbana Illinois in 1932. The topic was noted, and, in accordance with the custom, should have appeared in the list of suggested topics on which all members of the conference vote to determine what shall be included in the next year's program. The item on terminology, however, did not appear on the list despite the general interest shown when the topic was suggested. The subject of terminology was originally suggested after the attention of the conference had been
called to the fact that three hours and twenty minutes had been spent, of a total of fourteen hours conference time, in random debate caused by confusion over professional terms. Such an incident, as ignoring the proposed topic of terminology, may reflect a feeling of indifference either on the part of the program committee or the conference as a group. Whatever the reason, from a professional angle, the group must continue to labor under a distinct terminological handicap because of the attitude shown.

The "Manual Training" section of the Western Arts Association on the other hand, has questioned the status of its own use of professional terms and as evidence of attitude appointed a committee at its Cleveland meeting in May, 1929 to investigate particularly the use of the term Manual Training. A progress report was made at its 1930 meeting in Minneapolis in the form of Mr. Hutchinson's study (5) and again in 1931 at Louisville, Kentucky by a progress report of the present research. In recognition of the need and value of the work being done the executive council of the Western Arts Association appropriated $100.00 to carry on The Terminological Investigation in spite of the fact that the year's total operating budget for the Association was reduced $800.00. While such an occurrence may be complimentary to a committee's efforts, it nevertheless reflects professional attitude.
Personal Attitudes as Expressed in Published Articles.

The search for definitions has revealed interesting individual attitudes toward professional terms in the fields of Industrial Arts and Vocational Education. Attitudes of indifference and discrimination have been noted in the same and different individuals. Roberts, in his bulletin, "Manual Arts in the Junior High School" makes the following statement:

The term manual arts, practical arts, mechanic arts, industrial arts, and manual training have been variously used to mean the same thing or different things. Some one of them has been used different times to express different meanings or degrees of meaning. For purposes of this discussion they have been accepted as synonymous and as defining hand activities given in school for general educational purposes.

Similarly in the "Handbook on Industrial Arts and Vocational Education" published by the Board of Education of the City of Detroit, the term Vocational Education is knowingly used for the name of a department including other distinctly different phases of work. It reads:

Vocational Education is a term generally used to designate any type of training directly concerned with the preparation for gainful employment. In Detroit this term is used as a name for the department which supervises trade work, technical education, industrial arts, mechanical drawing, and home economics. The department of Vocational education, therefore, has charge not only of certain trade and technical subjects concerned with the preparation for gainful employment, but also with such subjects as

---

industrial arts, mechanical drawing, and home economics intended for general education, as a preparation for home duties, and as a "try-out".

Some individuals are entirely indifferent to careful discriminations in terminology. Others may be exceedingly discriminatory in subjects of their particular interest and about which they are well informed and at the same time antagonistic or discouraging towards clarification in other phases less known to themselves. A well known editor and writer in Industrial Arts and Vocational Education displays something of this inconsistency in his attitude toward terminological distinctions. Regarding instruction sheets, a phase of work about which he is particularly interested and well informed, he presumably writes:¹

INSTRUCTION SHEET: A general term applied to all forms of written or printed instruction sheets purporting to give instruction, and the proper use of this term will aid greatly in clearing up difficulties. The name of a special type of instruction sheet should not be used or a general term to cover up all types. The failure to observe this distinction indicates a lack of discrimination.

The same writer expresses the following attitude when discussing the term general shop in a magazine editorial, a phase of work over which he does not seem to display a great amount of enthusiasm or support. He writes:²


*"Presumably" refers to the fact that Selvidge was co-author.
It is very doubtful whether we shall find any common agreement as to the meaning of the term, or what it describes; but if we should, what are we going to do about it? Can we restrict its use to work that conforms to a definition, and require people who use the term to be orthodox? I fear we cannot, and I suspect we are wasting much time in trying to do so. I sympathize with those who feel so concerned about it as, like most young teachers, I passed thru a period of anxiety as to the meaning of terms: but broader experiences have lead me to the conclusion that what we teach is vastly greater importance than what we call it. Would it not be more profitable to try to find out what we teach young people, rather than to spend our time discussing what is meant by some descriptive term which is widely used to describe a great variety of situations.

These examples may serve to illustrate how the attitudes of mind assumed by individuals may promote and disseminate confusion in the terminology of the profession. Confusion in the terminology means, loss of time, effort, and efficiency resulting in slow professional recognition and growth. The casting aside of personal prejudices, the attitude of open mindedness, and a conscious effort to observe distinctions, should assure both personal and professional advancement.

**Personal Reactions of Jurors to the Check List of Concepts.**

The comments of individuals in the form of personal letters reflect individual attitudes that may be of interest and value. Speaking of the study Professor F. C. Whitcomb of Miami University, Oxford, Ohio writes:

A questionnaire is so apt to cause a misinterpretation of one's idea. For example, many people are now using *Manual Training* and *Manual Arts* in a sense to mean very good educative work. I can only think of these terms as representing an older conception of practical work in the school. You are doing a fine piece of work.
George F. Donson of Washington High School, Washington, Pennsylvania, writes:

Your study is an important one. In the Industrial Arts field, terminology is very important, (because) 1. No explanation of terms is necessary; 2. No guessing on the part of the public as to the contents of the course; 3. College credit may be obtained for the industrial arts work without delay; 4. Harmony in the ranks as in the medical profession means advancement of the cause.

Professor John F. Friese, In Charge Industrial Education Course, University Wisconsin, Madison, Wisconsin writes:

I think this is a splendid piece of work and I hope to be able some time to see the result of your study.

A. G. Bauersfeld, Director of the Technical work in High Schools, Chicago, Illinois writes:

The bulletin prepared by your committee, entitled "The Terminology Investigation" "Report to the "Manual Training" section of the Western Arts Association, Louisville Kentucky, 1931" is before me. I read the material with considerable interest and think that you have made a real contribution in bringing out the designation of terminology in our field of work.

If it is possible to teach old dogs new tricks, perhaps we will be able to persuade the present generation of teachers in our professional organizations to talk the same language when we discuss our work.

You will note that in previous paragraphs I have avoided the pitfall of designating any particular type of work. However, I do agree with your report in that "Industrial Arts" is a better form of terminology than either "Manual Training", "Manual Arts" or "Technical Training". Perhaps we shall have to pass on to the next generation the suggestions that we have a universal language which is spoken by all of the teachers in the non-academic fields of education.

Professor Charles H. Bailey, State Teachers College, Cedar Falls, Iowa writes:
I find that it has been rather difficult to mark the papers as some of the statements seemed to be indefinite and some incomplete and confusing. (concepts derived from published definitions)*. However, I have marked, correct, those that seemed to me to be involved in the connotation of the term considered whether completely or only partially true.

I think this is a very interesting study and that it may do much to clear up much confused thinking and usage in connection with these terms.

A personal letter from Professor Selvidge of the University of Missouri may indicate the difficulty and need of such a study as this. He writes concerning the concepts as derived from published definitions:

I can't conceive of anybody defining some of these terms in the language indicated. Many of the statements mean absolutely nothing so far as I can determine and certainly they mean nothing as a definition. A further thing that is confusing to me is that many of the statements are literally true but are only half truths and therefore convey the wrong idea. For example, we may truthfully say that American citizens are foreign born, but such a statement would give the wrong impression.

The expressed attitudes as a whole were assuring and encouraging. Perhaps the greatest benefit of any terminological study comes from the stimulation of a critical attitude together with a feeling of desire and need for finer discriminations in the use and interpretation of terms.

*The statement in parenthesis is mine.
PART III

SUMMARY AND CONCLUSIONS
Chapter IX

SUMMARY OF THE STUDY

The present study has been concerned principally with two phases of the Western Arts Association's program of researches in terminology. Namely: the contemporary use and misuse of professional terms, and the views of leaders toward the interpretation of these terms. The existence of such a program infers, or assumes, a need for clarification of nomenclature in Industrial Arts and Vocational Education. The present research has attempted to emphasize and validate this assumption by pointing out specific examples of confusion. A study of this confusion and an effort to untangle meanings has necessarily involved several problems. These may be pointed out more specifically with the hope that their solution in this research may be of assistance in future studies.

Problems Encountered in the Study.

The first problem encountered was that of determining what constitutes a professional term. A search of available material failed to reveal any assistance on this point. Hence, the solution, for purposes of this study, was found in utilizing Hutchinson's master list of professional and technical terms as a basis for jury action.

The formulation of a working list of professional terms necessarily became the second problem. This involved a
search for terms in the professional literature of Industrial Arts and Vocational Education and their ultimate selection for purposes of study. The terms appearing in the final form were obtained through a second jury study utilizing the criteria previously determined. The list as compiled for this study is undoubtedly incomplete. Many of the terms approach the "border line" which adds to the difficulty of selection. However, the criterion was kept in mind that only those terms strictly falling within the category of professional terms in Industrial Arts and Vocational Education should be used.

The third major problem following the listing and analyzing of published definitions became that of selecting the valid concepts. Eighteen terms were chosen as a test group for establishing a technique. While several techniques were considered, the jury method was selected as offering the most satisfactory solution. This technique was applied only to terms, eighteen in all, for which a sufficient number of definitions had been found to warrant further study.

The formulation of final definitions presented the fourth and remaining problem. This amounted to the regrouping and restatement of concepts, previously selected, in the form of complete sentences which comprise the definition. The problem was largely one of attempting to write the concepts in as clear and concise form as possible.
Confusion in the Professional Terminology of Industrial Arts and Vocational Education.

The evidence of confusion in nomenclature presented in this research may seem to demonstrate the obvious. While this is undoubtedly true for some individuals, examples of indifference and lack of discrimination indicates many are not aware of the continued misuse of professional terms. This part of the present study may serve to make the shop teacher, the student, the supervisor, the professor, more alert to the desirability and need of the clarification of their professional terminology. Hence it may be stated that the obvious is often as difficult of interpretation as the obscure.

An effort was made to determine those terms if any that have become particularly confused in use. Those for which confusion is most obvious appear in the list of 18 terms (pp. 43-63) for which the complete study has been carried out. Additional terms that show need of clarification are:

- arts and crafts
- avocation
- comprehensive general shop
- cooperative education
- course
- cultural
- curriculum
- exploratory
- fundamental processes
- general industrial education
- general industrial school
- industrial school
- industry
- manual materials
- modified general shop
- multiple activity shop
- occupation
- prevocational school
- technical manual arts
- technical training
- vocation
Further study of implied concepts may show more terms equally, or even more, misinterpreted than the ones listed above. The failure to find more than one definition for many terms and even no definitions for others has made it impossible to objectively point out a degree of confusion. There does seem, however, sufficient data to draw certain conclusions from the study as a whole.
Chapter X

CONCLUSIONS OF THE STUDY OF PROFESSIONAL TERMS

The present study has been largely concerned with establishing a technique for evaluating and formulating definitions. Nevertheless certain conclusions may be drawn as an outcome of observations made. These conclusions may serve as an immediate aid in clarification and as bases for further study and recommendations in nomenclature.

The Inadequacy of Published Definitions.

Reference has been made (page 29) to the comparatively small number of published definitions found for professional terms occurring in the master list of this study (Appendix "A"). Such a small number of definitions may fail entirely to present concepts that accurately define or interpret the term in question. Perhaps the published definitions when few in number, only one in many cases, may even involve concepts entirely incorrect. Obviously then this source seems entirely inadequate when used alone and must be supplemented by other techniques to validate the formulation of ultimate definitions.

Family Relationships of Certain Terms.

An interesting observation of this study is one which seems to reveal certain relationships between terms combining the word "arts". A study of these terms may aid in clarifying one's understanding of the many terms involved.
The terms **Practical Arts**, **Practical Arts Education** and **Practical Education** are used as generic terms in the following classification:¹

**THE "ARTS" FAMILY GROUP**

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<th>PRACTICAL-ARTS EDUCATION</th>
<th>PRACTICAL EDUC.</th>
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<td>General Education</td>
<td>Teacher Preparation</td>
<td>Educ. for Spec.</td>
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<tr>
<td></td>
<td>(Refferring to Column 1.)</td>
<td>Vocations</td>
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<td>*Agricultural Arts</td>
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<tr>
<td>Mechanical Arts</td>
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</tr>
<tr>
<td>Vocational Arts</td>
<td>Vocational-Arts Educ.</td>
<td>Vocational Educ.</td>
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</table>

Additional terms from the Master-List that include the word "Arts" are: Cultural Arts, Developmental Arts, Expressional Arts, Fine Arts, Formative Arts, Graphic Arts, Liberal Arts, and Recreational Arts. Perhaps these too have some relationship to other terms.

There are naturally certain irregularities and even contradictions in such a list. It is questionable for example if the term **Vocational Arts** is possible. The word **Vocation** would seem to eliminate any thought of a term referring to content of a **general-education** nature. The term **Practical Education** has been generally interpreted to mean all education of a"practical"nature including the terms

Practical Arts and Vocational Education. Such a list does seem, however, to possess some congruity and if this is true should serve as a guide in future use and coinage of terms to insure consistency and harmony in their classification.

Undesirable Terms.

The study has brought to light a few terms which might profitably be discontinued largely because of their meaningless character. The Louisville Report states that:

The term Manual Education, although used extensively on the West Coast, seems from a pragmatic view to be a contradiction. It is difficult to understand how one part of the human anatomy (Manual comes from the Latin "Manus", meaning hand) could be "educated for a vocation" without regard to the whole individual. Surely it might be well to drop the term for physiological and psychological as well as professional reasons.

The term Comprehensive General Shop has been used to indicate a type of shop (34-190) usually termed general shop. The additional adjective "Comprehensive" adds but little meaning, by dictionary definition, to the term and may be viewed as only serving to "clutter up" an already uncertain terminology.

The term vocational arts seems somewhat inconsistent since it is difficult to connect up anything "vocational" with the term "arts" which implies general education through usage.

Four jurors indicated that the term Prevocational Education was undesirable and should be dropped. Their reactions as stated on the check sheet were:
"All education is vocational". 
"Not a good term". 
"I do not use the term at all". 
"Several of these do not mean anything to me".

Other terms suggest seemingly contradictory meanings. Terms such as Practical Manual Training, Occupational Arts, Household Engineering, Laboratory Shop, Manual Dexterity Education, Typical General Shop, and Manual Training Form, fall in this category. Accordingly, one conclusion of this study is that a need exists for a principle that all terms inconsistent and meaningless in their combination of words be discouraged and dropped from the professional vocabulary of Industrial Arts and Vocational Education.

Certain individual reactions have been noted regarding the use or misuse of certain terms. One juror makes the point that the term Industrial Arts should denote the "arts of industry" rather than a special form of education; and that Industrial Arts Education should be the term to indicate the type of work being done in schools. Opposed to this is the expression of four jurors who indicate that Industrial Arts Education should be reserved to denote teacher preparation in Industrial Arts. Another juror indicates that Practical Arts, Practical Arts Education, Industrial Training and Vocational Training are "not good terms". His reason other than bias is not clear. Contrary to this prejudice is the fact that no evidence has been found in the course of this study to indicate that these are not desirable terms. The only exception is the single term Pre-vocational Education which three other jurors indicate as undesirable.
Undoubtedly certain additional terms may be questioned, but sufficient evidence has been found lacking in this study to justify such a conclusion. Other terms at first appearing questionable reveal sufficient distinctions to warrant their existence. The problem becomes largely one of the capability of the individual to make fine discriminations rather than an inherent fault in the terms themselves.

The Need for a Complete Glossary.

It is a conclusion of this study that the fields of Industrial Arts and Vocational Education are in need of a glossary of professional terms. There does not exist in these professions a single comprehensive source of information regarding the professional terminology. The largest and perhaps most satisfactory single attempt to clarify the professional terminology is that of Snedden, who defines forty-three terms in Appendix "B" of his book on Vocational Education. A glossary of the 388 terms involved in this study, and others as they appear, would be valuable to writers of professional material. Likewise "shop" teachers, students preparing to become teachers in Industrial Arts and Vocational Education, principals and professors might find such a glossary a desirable part of their professional equipment.

Professional Attitudes.

A wholesome open-minded attitude removed from personal prejudices and personal animosities is essential to professional progress through clarification of terminology.
An answer to the time worn statement, "It isn't what you call it, but what you do that is important" might well be stated "What value is the thing you do professionally if one keeps it to himself?" Such a statement as the former may seem to label the speaker as blind to the very existence of his profession.

Two attitudes have seemingly brought about confusion over those terms which have a historical background; Manual Arts and Manual Training are two terms in point. One point of view has been that of a changing subject with the name for it remaining the same; thus Manual Training today is the "Up-to-date" type of work being carried out in school shops, the work has changed, the name has remained the same, thus it is necessary from this point of view to speak of the old Manual Training and the new Manual Training. The second attitude is that of considering Manual Training as a given type of "shop work" of early origin with its own ideals, objectives and justification; that it may still exist, and if it does, should bear that name. This attitude holds that the newer forms of "shop work" for general educational purposes is something different, and with the change in work comes a change in name for that work. Thus Manual Training and Industrial Arts, may, and probably do, both exist at the present time. Manual Arts represents a third type of work having its origin later than Manual Training but previous to Industrial Arts. The relationship of these terms representing this second viewpoint has been put in graphic form by
Warner in the report of the Terminological Investigation before the Western Arts Association at Louisville, Kentucky on May 1, 1931. It appears as follows:

The present analysis deals with a family of three professional terms which has caused much controversy. The bases for the analysis, while employing definitions, go beyond that by involving: Historical Influences, Psychological Implications, Etymological Distinctions, and Philosophical Functions. In fact, it is quite reasonable to say that the analysis illustrates how most of the techniques of the entire Investigation may be employed. Read from left to right and down.

**MANUAL TRAINING**

Inception: 1876

Influence: Della Voss, Runkle, Woodward

Skill: Artisan basis, Tool mastery

Methods: Dictated exercises

Content largely:

Work in wood,

Mechanical drawing

End functioning In itself

Basis of Truth:

Authority

Centers in Teacher

Plan: Unit-shop

**MANUAL ARTS**

1896

Bennett, Salomon

Craft basis, Technics

Assignment of useful-artistic projects

Arts: Graphic, Plastic, Textile, Mechanic, Book-making

Avocational, nice to have done, development of appreciation for the Crafts

Authority and Custom

Centers in Project

Unit or "General-shop"

**INDUSTRIAL ARTS**

1910

Bonser, Dewey, Russell, Bigelow

Individual basis, "Devel". Growth

ditto plus more challenge to individual creativity

Any representation of modern industry conditioned by stated objectives

Extended to: Exploration, Development of Personal-Social Traits, Guidance, Consumer Education,

Scientific evidence and Criteria

Centers in Pupil

LABORATORY OF INDUSTRIES Idea as well as Unit-shops

It is a conclusion of this study that the second attitude is the one generally accepted. This is verified both by published definitions and by the reaction of jurists.
Chapter XI

RECOMMENDATIONS

A study of any subject involving as many difficulties and as much confusion as the fields in question may profitably make certain recommendations for clarification and solutions. Following is presented such a list of recommendations:

1. Published definitions of such terms as **Industrial Arts** and **Industrial-Arts Education**, **Commercial Arts** and **Commercial-Arts Education** reveal that many writers do not make distinctions between these related terms. There are a few, however, who add the word "education" to a term to suggest that it applies specifically to the preparation of teachers. This practice is recommended.

2. Throughout the study of professional terms there has been evidence of confusion between the terms **training** and **education**. A distinction has long been made between these two terms by use of the homely illustration of it being possible to "train" a dog, but questionable whether it is possible to "educate" him. **Training** suggests drill in the fixation of habits, while **education** suggests the development of appreciations, discriminations, problems solving and the like. It is recommended that this distinction be made when using the terms singularly or in conjunction with other terms as **Industrial Training**, **Industrial Education**, **Teacher Training**, and **Teacher Preparation**.
3. It is recommended that the technique of analysis of terms for concepts be employed to validate both old and new terms. This becomes an application of the technique utilized in this study to the individual and future use of professional or other terms.

4. The lack of a sufficient number of concepts from published definitions for many terms, and the question of completeness about others leads to another recommendation. Concepts should be determined through other means in addition to the one employed in this study. Implied concepts from published material might be considered or individual interpretations obtained through personal correspondence.

5. No definition gained by a study of concepts alone should be considered completed until it has been evaluated in light of an historical, etymological and psychological investigation and probably other approaches.

6. Consistency in the use of nomenclature is recommended whatever the ultimate interpretations may be.
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BIBLIOGRAPHY
A Selected List for Further Reference


5. Hutchinson, Herbert H. *An Etymological Study of Professional and Scientific Terms Used in Industrial Arts and Vocational Education.* Masters, Ohio State University, 1930, 106 pp. Thesis


Appendix A

MASTER LIST OF PROFESSIONAL TERMS
APPENDIX A

Master List of Professional Terms

Introduced in the Study

A

adult education
agricultural arts
agricultural arts education
agricultural farm shop
all-day trade school
all-purpose shop
applied arts
apprentice
apprenticeship
artisan
arts and crafts
assignment sheet
association school
auxiliary information
avocation
avocational projects

B

bananasic arts
blind-alley job
bookmaking arts
building trades
business arts
busy work

C

case analysis
civilian rehabilitation
commercial
commercial arts
commercial curricula
commercial education
commercial operations
commercial vocation
common labor
C (continued)

composite shop
comprehensive general shop
comprehensive laboratory
comprehensive shop
comprehensive unit
constructive processes
consumer education
consumer knowledges
consumer needs
consumer values
continuation school
cooperative education
cooperative school
coordinator
corporation school
course
course of study
cultural
cultural arts
curriculum

D

demonstration
developmental arts
developmental purpose
devocationalize
dictation method
disciplinary training
diversified shop
drawing
dullard
dull-season class

E

educational handwork
elementary industrial arts
employment
employment-extension
evening industrial school
evening school
evening trade extension class
evening trade preparatory training
evening vocational school
everyday mechanics
exercise
exercise method
E (continued)

exercise sheet
exploratory
exploratory activities
expressional arts
expressional manual arts
extension course

F

factory method
farm mechanics
farm shop
finding courses
fine arts
follow-up
fore-exercise
foreman training
fore-taste
formal discipline
formative arts
free choice method
full-time institution
fundamental operations
fundamental processes
fundamental trade

G

gainful occupation
general continuation school
general education objective
general evening school
general industrial arts laboratory
general industrial education
general industrial school
general laboratory
general laboratory of industries
general mechanics
general metal shop
general shop
general shop ideal
general wood shop
graphic arts
group project method
H

hand and eye
hand-minded
hand training
hand work
handicraft
handicraftsmen
handiwork
handyman
home economics education
home-making education
home mechanics
home project
household arts
household arts education
household carpentry
household engineering
household mechanics

I

illustrative material
individual differences
individualized instruction
industrial
industrial activity
industrial area
industrial art
industrial arts
industrial arts education
industrial college
industrial education
industrial experience
industrial home school
industrial institute
industrial intelligence
industrial mechanics
industrial occupation
industrial preparatory
industrial production operation
industrial relations
industrial school
industrial science
industrial social studies
industrial studies
industrial training
industry
information sheet
information topic
in-service training
I (continued)

instructional material
instruction sheet
instruction unit
intellectual occupation
inventiveness

J

job
job analysis
job plan
job sheet

L

laboratory of industries
laboratory shop
lead-on-value
lecture
lecture-method

M

machine drawing
managerial ability
manipulation
manipulative process
manipulative test
manual
manual activity
manual art
manual arts
manual dexterity education
manual education
manual labor
manual labor movement
manual materials
manual trade
manual training
manual training education
manual training form
manual working vocations
mechanical
mechanical ability
mechanical arts
mechanical experience
M (continued)

mechanical instruction
mechanical shop
mechanical training
mechanic art
mechanic arts
metal trades
method of procedure
mixed class
model
modified general shop
motor activity
multiple activity shop
multiple purpose shop
multi-unit laboratory

N

negative guidance value
night school
non-productive practical work
non-technical
non-vocational

O

occupation
occupational analysis
occupational arts
occupational information
occupational standard
occupational studies
occupational therapy
one-industry shop
operation
operation sheet
outside work

P

part-time
part-time classes
part-time cooperative education
part-time cooperative training
part-time continuation school
part-time education
part-time school
payroll job
personnel director
personnel organization
pick-up method
pick-up process
pictorial art
placement
placement training
plastic arts
policing
polytechnic institute
positive guidance value
practical
practical activity
practical arts
practical arts education
practical craftsman
practical experience
practical manual training
practical mechanics
practical training
practical work
pre-employment training
preparatory commercial education
prevocational
prevocational education
prevocational school
prevocational study
prevocational training
problem project method
process
producer education
production job
production line
production method
production work
productive practical work
progress chart
project
project analysis
project sheet

R

recapitulation method
recreational arts
related information
related knowledge
related subject
remedial program
Russian system of tool instruction
S

segregated class
self-finding
semi-skilled trade
semi-technical
set-up
several purpose shop
shop activity
shop crafts
shop exercise
shop kinks
shop organization
shop project
shop teacher
shop work
short-unit course
skill
skilled mechanic
skilled trade
skilled worker
skill of hand
skill training
sloyd
special interests
special-subject teacher
special training
specific ability
subject matter
supervision

T

teaching aptitude
teaching load
technical
technical arts
technical education
technical information
technical institute
technical instruction
technical job
technical high schools
technical knowledge
technical manual arts
technical school
technical trade efficiency
technical training
technical work
threshold school
textile arts
T (continued)

tool processes
trade
trade analysis
trade exploratory
trade extension
trade extension education
trade extension school
trade extension training
trade extension vocational education
trade information
trade preparatory school
trade preparatory training
trade process
trade school
trade technique
tradesman
train
training
trial and error
tryout
try-out courses
typical general shop

U

unconscious imitation
unit of instruction
unit of work
unit operation
unit trade school
unit trade shop
unspecialized practical activity
unskilled
unspecialized
up-going training

V

vestibule school
vestibule training
vocation
vocational activity
vocational agriculture
vocational agriculture education
vocational arts
vocational choice
vocational commercial education
vocational education
vocational exploratory objective
V (continued)

vocational guidance
vocational home economics
vocational homemaking education
vocational industrial education
vocational industrial training
vocational motive
vocational pursuit
vocational project
vocational rehabilitation
vocational school
vocational selection
vocational teacher
vocational teacher training
vocational training

W

wage earner
wage-earning occupation
working drawing
work level
work shop
worker
Appendix B

PUBLISHED DEFINITIONS FOR TERMS INVOLVED IN THE MASTER LIST
APPENDIX B

Published Definitions for Terms Involved in the Master List

AGRICULTURAL ARTS EDUCATION

1. Includes those forms of training and study based upon agricultural pursuits and designed to enhance general intelligence, to promote appreciation of agriculture as a form of economic activity, to show wherein various sciences have practical application to human affairs, and to give vocational guidance and to inspire vocational ideals as these relate to the field of agriculture. (51-547)

ALL-DAY UNIT TRADE SCHOOL

1. A trade school in which instruction extends over not less than nine months per year and whose controlling purpose is to "fit for useful employment" and is designed to train young people of 14 years of age or over for effective entrance to a particular trade or industrial pursuit. (36-158)

ALL-PURPOSE SHOP

1. A shop designed to allow for contact with a great variety of materials, processes, and experiences by furnishing access at least to facilities for woodworking, electrical work, sheetmetal, simple forgework, elements of foundry practice, simple pipe fittings and other elementary processes of the plumber's work. (source not recorded)

ARTISAN

1. One trained to manual dexterity in some mechanic art or trade; a handicraftsman; a mechanic. (59-2620)

2. One who works with his hands and manufactures articles in metal, wood, etc. (11-284)
ARTS AND CRAFTS

1. Special phases of manipulative work offered for the enrichment of general education, especially concerned with the artistry of the project, including tooled leatherwork, weaving, painting, carving, making jewelery, and art metal. (34-190)

2. That work which the student is given instruction in the requirements and limitations of tools, materials, and processes, and given the problem of designing and making a certain object. (36-354)

ASSIGNMENT SHEET

1. A sheet usually consisting of two parts, one, the assignment of the task or job, and the other, a list of references where information concerning the method of completing the assignment, doing the job, or solving the problem is found. (37-293)

2. A special form of instruction sheet used to direct the worth of the student in securing information or to direct his practice and drill. It usually consists of a series of questions the answer to which the student is expected to get from the assigned reading, or as statement of principles with examples of their applications and provision for drill. (49-263)

3. This type of sheet is used in making assignments for investigation, and in the presentation of problems and scientific principles. It is a most valuable type of sheet. (50)

AVOCATION

1. An activity which calls one away from one's ordinary, economic pursuits. A form of recreation but allied to a vocation. (37-293)

2. That which calls one away from one's regular employment or vocation; a subordinate occupation. (59-2520)

3. Side employment, a secondary task to which one devotes time; a hobby. Often used where vocation is meant. (15)

AVOCATIONAL PROJECTS

1. The building of boats, airplanes, bird houses, toys, and other things in which persons find employment in making in home work shops during leisure hours. (21-)
BOOK-MAKING ARTS

1. Printing, engraving, lettering, leather tooling, bookbinding and construction work with paper, cardboard and paste. (3-116)

CIVILIAN REHABILITATION

1. The vocational reeducation of persons crippled or incapacitated in industry. (36-354)

COMMERCIAL ARTS EDUCATION

1. Those studies derived from, or based upon, the commercial pursuits which are designed to give liberal or general education and to contribute to vocational guidance and vocational ideals in the field of commercial occupations. (51-587)

COMMON LABOR

1. That form of activity for which no particular training seems necessary. (37-293)

COMPOSITE SHOP

1. The term is correctly used for a school shop that is organized and equipped to give instruction in two or more types of shop work, such as woodwork and metal work, all under the control of a single teacher. (55-214)

COMPREHENSIVE GENERAL SHOP

1. A one room shop which houses a number of small related instructional divisions which may consist of metal work, finishing, drawing and printing. (34-190)

COOPERATIVE EDUCATION

1. Cooperative education is a form of education which provides for the highschool student, job training under actual employment conditions, and instruction in school under well qualified teachers who clearly realize the importance of developing in the student the traits emphasised by employers and essential to success. (42-149)
2. A plan of education whereby the learner's time is divided between the public schools on the one hand and the state trade school on the other (Connecticut plan) (54-492)

COOPERATIVE SCHOOL

1. Two-boy plan or the Cincinnati plan or the week-about plan, in which the boys are paired, one boy working in the shop for a week while his partner is in school. The next week the two boys change places. This insures continuous work in the industry, and with the two groups of pupils the program of the school is not interrupted, the work of the one class being repeated the next week with the other class. The plan is called cooperative because it represents a close cooperation between the school and the industrial plants in which the pupils work. (23-238)

2. A school based on an agreement between the group of manufacturers and a school system whereby the manufacturers agree to institute and carry on a thorough and comprehensive apprentice course in their particular trades, and specialized instruction to the apprentices. (36-354)(46)

3. A day vocational school where the complete program of vocational training involves the cooperation or other relationship of two agencies, one, more specifically the school, giving technical and related instruction, and the other an institution or agency having commercial or practical ends in view, but placed in a cooperative relationship as a means of furnishing opportunities for practical experience to properly prepare pupils. (36-354) (31-587)

COORDINATOR

1. A person whose main duty is to coordinate the work of the classroom with that of industry, commerce and home. (37)

2. A person who supervises or correlates the class instruction and the practical experience of part-time students; i.e., the work of the classroom, and of industry, commerce, and the home. (36-354)

3. The one who is directly responsible for making contacts, between the schools and industry, that result in a cooperative program. (54-492)
CORPORATION SCHOOL

1. Any school maintained by a business concern, quite independent of outside control, for the purpose of fitting its new employees for efficient service, or for the further training of its older employees to fit them for positions of greater responsibility, as foreman, executives, or technical experts. (36-354)

2. A privately operated school conducted by an employer, corporation or business firm usually to prepare persons for efficient entrance upon definite types of employment in the plant or to advance the efficiency of those already employed. (54-492)

COURSE

1. A subject pursued for a semester or term. (38)

2. A series of motions or acts arranged in order; a succession of acts or practices connectedly followed; as, a course of medicine; a course of lectures on chemistry. (59-2620)

CULTURAL

1. Act of improving or developing by education, discipline, etc.; the training, disciplining, or refining of the moral and intellectual nature. (59-2620)

CURRICULUM

1. Any systematic arrangement of courses which extends thru a number of years and which leads to a diploma of graduation. (4)

2. A course, particularly, a specified fixed course of study, as in a University. (59-2620)

DEMONSTRATION

1. The teaching of another person or persons to perform any act of skill by the instructor himself performing the act in the presence of the student or students. (23-238)

2. An exhibition by performance, with tools, materials, and processes, by the teacher, of the proper handling of tools, manipulating materials and processes, performing operations and solving problems. (37-293)

3. Showing the learner how the job or operation is done with real tools, stock, etc., just as he will have to
do it when he is out in the shop on his "own", after he has been instructed, or in making the learner do the job himself under the supervision and direction of the instructor. (2-526)

4. The presentation by the teacher of the new manipulative procedures of the projects of the course. (34-190)

5. An exhibition or public display by way of proof, example, or instruction; esp., as exhibition of specimens and performance of experiments or operations, as in anatomy. (59-2620)

6. The showing of how things are done, and to show in such a way that those who are being shown will learn how to do the things demonstrated. (50)

**DICTATION METHOD**

1. A method by which all members of the class make the same thing at the same time, by the same method, with exactly the same size, shape, and finish. (56-397)

**DRAWING**

1. Drawing is a means of expression by which ideas of form, proportion and structural relations are conveyed and rendered appreciable. (source not recorded)

2. That which is drawn; a representation drawn by pen or pencil, etc; often, a slight or preliminary representation; a sketch. (59-2620)

**DULLIARD**

1. A stupid person; a dunce. (59-2620)

**DULL SEASON CLASS**

1. A class organized for workers who have left school for employment, but are temporarily out of employment because it is the dull season in their particular occupation. (36-354)

**EDUCATIONAL HANDWORK.**

1. Training to develop a skill of hand and eye, and an attitude of mind which will serve as a foundation for special technical training at a later stage. (25)
ELEMENTARY INDUSTRIAL ARTS

1. Those courses which are designed for studying present-day industries in an elementary way, in order that boys and girls may be more intelligent and appreciative of conditions, materials, processes and methods involved in manufacturing the products observed in everyday life. (14-31)

EVENING INDUSTRIAL SCHOOL

1. A school or class established and maintained under public control for the purpose of giving instruction supplemental to the day employment to persons who have entered upon a particular trade or industrial pursuit, usually given in the evening but at all times outside the regular hours of employment of those enrolled. (17)

EVENING TRADE EXTENSION CLASS

1. An evening class which is supplemental to the daily employment of those enrolled. (54-492)

EVENING TRADE PREPARATORY TRAINING

1. Evening classes in which the instruction is given to persons who are preparing to enter a trade not already engaged in. (source not recorded)

EVENING VOCATIONAL SCHOOL (class)

1. One which offers instruction to persons over sixteen years of age supplementing the daily employment and at a time outside their regular working hours. (16)

EXERCISE

1. Attaining ability of any kind by doing or practice. (59-2520)

2. Performance of a function in which the performer is already somewhat competent. It is generally assumed that exercise in the second sense is exercise in the first so that the two meanings coincide. (15)

EXERCISE SHEET

1. Full working directions for doing an exercise. (55-214)
EXERCISE METHOD

1. A method employing exercises based upon a thorough analysis for the purpose of picking out the fundamental processes to be taught. (50)

EXPLORATORY

1. Pert. to connect with, exploration; serving in, or intended for, searching. (59-2620)

EXPRESSIONAL MANUAL ARTS

1. That type of constructive activity which is free from necessity of making use of conventional methods of procedure in the manipulation of materials or of developing skill sufficient to have the product class as other than amateurish and crude from the standpoint of technic and skill. (20-229)

FACTORY METHOD

1. Where the school shop is organized as a producing shop and the students assigned in rotation to certain tasks as the work comes through on a predetermined schedule. (37-293)

FINE ARTS

1. The activities by which such forms of beauty, as painting, sculpture and other ornamental or decorative forms are expressed and produced. (7-491)

2. Art which is connected with the creation of objects of imagination and taste for their own sake and without relation to the utility of the object produced. (59-2620)

3. Painting, drawing, architecture, and sculpture (these four being often called the arts of design) poetry, music, dancing, and dramatic art; sometimes restricted to the four first named. (59-2620)

FOLLOW UP

1. To pursue closely or indefatigably; to prosecute to a conclusion to strengthen the effect of by further action; as, to follow up a victory. (59-2620)
FOREMAN-TRAINING

1. A special form of training given to foremen, to supervisors and minor executives that extends a foreman's knowledge of his job as a supervisor, manager and instructor. (54-492)

FORE-TASTE

1. A taste beforehand; partial enjoyment in advance; anticipation. (59-2620)

FREE CHOICE METHOD

1. A methodless method that undertakes to satisfy the temporary whim of the individual pupil at all times. (56-397)

FUNDAMENTAL PROCESSES

1. Those operations and facts which occur with such frequency as to become fundamental in a subject or trade. (49-263)

GENERAL-CONTINUATION SCHOOL

1. Instruction in general education for pupils whose elementary schooling has been deficient. (23-238)

2. A school devoting itself particularly to providing a general educational background upon which later a superstructure of vocational education may be built. (36-554)

GENERAL EVENING SCHOOL

1. Non-Vocational evening classes in manual training, manual arts, practical arts, mechanic arts, and industrial arts which may give exploratory tryout or guidance emphasis to the instruction and open to all persons over the minimum age presented by law irrespective of their vocational interest or background for men or women.

GENERAL INDUSTRIAL EDUCATION

1. General industrial education is that form of education which is intended to fit persons for employment in some
one trade group, or closely related group of trades, such as the electrical trades, the printing trades, the textile trades. (37-292)

2. That education offered by a school organized to meet the needs of the industrial life of a community of less than 25,000 population, where full classes of unit trades are inadvisable. (17)

GENERAL INDUSTRIAL SCHOOL

1. A school designed to "fit for useful employment", not in a unit trade but to fit for entrance into a general industry or trade group. (source not recorded)

2. A public full-time day trade preparatory school that gives instruction in the elements of several related trade or industrial pursuits to each pupil (54-492)

GENERAL MECHANICS

1. A course to give considerable opportunity to engage in any avocational shop work primarily for the pupils of the language and commercial curriculums. (21)

GENERAL WOOD SHOP

1. A form of unit shop in which the various phases of woodwork are taught as carpentry, pattern making, cabinet work etc. (55-214)

2. The general wood shop is a general shop which is adapted to junior and senior high schools to acquaint pupils with the different branches of the woodworking industry. (34-190)

GROUP PROJECT METHOD

1. The offering of a group of products involving the same type of construction instead of a single project, and allowing each pupil to select the project from the group most nearly suited to his interests and his needs. (56-397)

2. The selection of projects and arrangement into several groups of varying difficulties, so chosen that all of the projects in a group involve essentially the same skills and content, and the same demonstrations of tool processes or construction problems. (50)
HANDICRAFT

1. A trade requiring skill of hand; manual occupation or skill. (59-2620)

HANDICRAFTSMAN

1. A man skilled or employed in handicraft. (59-2620)

HANDIWORK

1. Work done with the hands; hence, any work done personally; applied either to the labor or its result. (59-2620)

HAND WORK

1. Work done with the hands as distinguished from work done by a machine; handiwork. (59-2620)

HANDY MAN

1. A man who does odd jobs; a general-utility man. (59-2620)

GRAPHIC ARTS

1. These include all forms of drawing, both freehand and mechanical. The industries they represent are numerous—architectural and machine drafting, all forms of engineering drawing, designing for a variety of industries, and illustrating for newspapers, magazines and books. (3-116)

2. A broad term which embraces every branch of pictorial representation. (Print) Embracing every form of printing represented by text and illustrations. (11-284)

3. Those fine arts as drawing, painting, engraving etc. which pertain to the representation on a flat surface of natural objects. (59-2620)

HOMEMAKING EDUCATION

1. Includes those forms of vocational education whose controlling purpose is to train for homemaking and the non-wage earning occupations connected with the household. (39)
HOME MECHANICS

1. A group of projects taken from the home on the basis of utility and the technical and related information. (34-190)

2. A diversified course to teach a boy how to repair the various fixtures and equipment belonging to the household, including activities in several materials and given in a general shop. (21)

HOUSEHOLD CARPENTRY

1. The making of rather rough, but serviceable articles around the home such as heavier boxes, saw horses, benches lattice work etc., employing tools and processes distinctive of the carpenter trade. (21)

HOUSEHOLD ARTS EDUCATION

1. Includes all those forms of instruction and training based upon the occupations of the home or household, and which are designed to promote higher standards of appreciation and utilization in the field of the activities associated with homemaking, to promote right conceptions of the social importance of the home as a nursery of childhood and a haven for the wage earners of the family, and to show wherein the various arts and sciences have practical application in domestic life. (51)

HOUSEHOLD MECHANICS

1. A diversified course including activities in several materials of construction and given in a general shop to teach a boy how to repair the various fixtures and equipments belonging to the household. (21)

INDUSTRY

1. Any development of a craft, vocation, business, especially one which employs much labor and capital. An activity whereby the form of some basic raw material is modified by means of tools, materials, and processes. (37-293)

2. Industry is concerned primarily with material production. (28-245)

3. Any department or branch of art, occupation, or
business, one which employs much labor and capital and is a distinct branch of trade; as the sugar industry, the iron industry, the cotton industry, agricultural industries. (59-2620)

**INDUSTRIAL**

1. Relating to industry or labor as an economic factor, or to a branch or the branches of industry; of the nature of, or constituting, an industry or industries. (59-2620)

**INDUSTRIAL ART**

1. The application of such commonly accepted principles of design as primary mass or proportion, space division, contour, color harmony, center of interest, surface design, etc., industrial products, including architecture. (19-412)

**INDUSTRIAL MECHANICS**

1. A course planned to teach methods of production, qualities of materials, and the history and importance of various local and other industries. (21)

**INDUSTRIAL OCCUPATION**

1. An occupation followed by men or women who work in the manufacturing industries. (30-451)

**INDUSTRIAL SCHOOL**

1. A school for training pupils in the industrial arts; often, specif., such a school for young persons committed to it by legal proceedings. (59-2620)

**INFORMATION SHEET**

1. An information sheet is a type of instruction sheet that gives specific information upon a topic related to the job or work. (44)

2. An instruction sheet that deals with items as information, such things as shop terms, materials, facts, principles, formulas and like matter. (49-263)

3. This sheet gives facts or information concerning
tools, materials, or other matters connected with the vocation. It deals with that phase of information that gives a background for the work of the trade. (50)

**INFORMATION TOPIC**

1. A fact of science underlying practice, the kind of information necessary in planning a job in order that it may work out successfully. (48-111)

**INSTRUCTION UNIT**

1. A point in a trade on which the learner usually will require instruction. These may fall into two rather distinct groups: Those dealing with the manipulative operations, and those dealing with matters of information or knowledge. It usually represents a step or a minor objective in some larger undertaking. (49-263)

**INVENTIVENESS**

1. Able and apt to invent; quick at contrivance; ready at expedients; ingenious; also, characterized by invention; showing originality. (59-2620)

**JOB**

1. An occasional piece of work, situation or employment or an activity unit of any trade. A skilled tradesman is always working at some particular job or unit of his trade. (37-293)

2. Anything that a man is paid to do. (2-526)

3. An odd or occasional piece of work; esp. for a fixed price; as, he did the job for a thousand dollars. In various trades, often specif., a piece of work of the small miscellaneous kind taken as it comes from the public, as the printing of bills, posters, letterheads, etc. (59-2620)

4. A situation or employment; as, he lost his job. (59-2620)

**JOB ANALYSIS**

1. A process by which the facts and the data significant to a job are discovered, arranged, and recorded
for the purpose of developing standards, content, specifications, methods, etc. (37-233)

2. (Duty Analysis) A definition of the general limits of activity in a vocations. (50-587)

**JOB PLAN**

1. A list of the principle steps in the order that one would take them in doing a job.

**JOB SHEET**

1. A job sheet is the type instruction sheet that tells how to perform a definite job or a complete piece of work. (44)

2. An instruction sheet that tells how to do a complete job which may involve a number of operations. They are especially designed to secure production. They are also used for small unrelated jobs requiring little skill, such as home mechanics. (49-253)

3. The term job sheet may well be reserved for those types of instruction sheets involving doing or executing that gives as complete information as is necessary for doing a complete work job. A job sheet includes lists of materials and tools, directions (written or illustrated through drawings and photographs) for doing the job, questions to stimulate thought, and references to promote further study. (55-214)

4. This sheet undertakes to tell how to do a complete work job. It includes every phase of instruction necessary in doing the job and is adapted to quantity production. (50)

**JOURNEYMAN**

1. Properly, one who has gained a thorough knowledge of his trade by serving an apprenticeship, although the term is often applied to any workman who is sufficiently skilled to command the standard rate of mechanic's pay. (11-284)

**LECTURE**

1. Imparting information by one person to another person or group of persons by means of the spoken word, whether in an informal talk or on the more
formal occasion where the speaker addresses a large audience. (23-238)

2. A discourse on any subject; esp., a formal or methodical discourse, intended for instruction. (59-2620)

3. A lesson in class; an example. (59-2620)

MANIPULATION

1. Act of handling work by hand; use of the hands, in an artistic or skillful manner, in science or art. (59-2620)

MANIPULATIVE PROCESS

1. The manipulation or handling of tools and materials in bringing about the necessary transformation. (47-367)

MANUAL

1. Of or pert. to the hand or hands; done, made, or operated, by or used with, the hand or hands; as, manual labor; (59-2620)

MANUAL LABOR MOVEMENT

1. A movement organized in the United States about 1820 introducing manual instruction into the schools on the basis that pupils would work, under school auspices, for about half of the day, and would receive academic instruction during a part of the remaining time. (54-492)

MANUAL MATERIALS

1. Those materials that are useful in the expression of ideas by means of the hands. The term is used to include any material that can be converted from one form or arrangement into another at the direction of the mind, as wood, clay, paper, cloth, yarn, twigs, blocks etc. (60-351)

MECHANICAL

1. Pertaining to, or concerned with, machinery or mechanism; made or formed by a machine or with tools. (59-2620)
MECHANICAL ABILITY

1. That ability which enables a person to work with tools and machinery and materials of the physical world, and in doing so to perform creditably or to turn out an acceptable product. (35)

MECHANIC ARTS

1. Mechanic arts is that form of preprofessional technical education which has to do with the systematic use of tools, materials, and processes as preparation for entrance to more specific training courses for the engineering profession. (37-293)

2. ...deal especially with the two great constructive materials of our civilization--wood and metal. Not only the building and machine industries, but most manufacturing and engineering enterprises--ships, railways, private vehicles, home furnishings and conveniences depend upon the skillful use of these two materials. (3-116)

MIXED CLASS

1. A class made up of persons some of whom are taking the work on a trade preparatory basis and others on a trade extension basis. (54-292)

MODEL

1. A mixture representation of a thing, with the several parts in due proportion and arrangement; sometimes, a facsimile of the same size. That which exactly resembles something; a copy; likeness; image. (59-2620)

MODIFIED GENERAL SHOP

1. A modified general shop may consist of two adjoining shops, connected by a wide door, by an open archway, or by a passage way as the case may be. The two teachers can work together very well. Pupils can pass from one shop to the other in order to work with various materials, as for example, a boy may do the woodwork on a project or job under one teacher and the metal work on the same project or job under the supervision of the other teacher. (55-214)

MULTIPLE ACTIVITY SHOP

1. The term is correctly used for a school shop that is organized and equipped to give instruction in two
or more types of shop work, such as woodwork and metal work, all under the control of a single teacher. (55-214)

NIGHT SCHOOL

1. For students who are employed during the daytime, who are therefore beyond the compulsory school age and who seek instruction that shall be supplemental to their daily employment. (23-238)

NON-PRODUCTIVE PRACTICAL WORK

1. Includes all practical work as a part of vocational training the output of which can be put into no practical use.
   Examples: Business college students keeping books, doing typewriting, etc., of a non-marketable character; agricultural school students raising products which are not marketed or consumed. (51-143)

OCCUPATION

1. The principle economic activity of one's life, one's vocation, calling, trade. (37-293)

2. That which occupies, or engages, the time and attention; the principal business of one's life; vocation; employment; calling; trade. (59-2620)

OCCUPATIONAL INFORMATION

1. Information about employment condition, standards of workmanship, types of work undertaken, special requirements, materials used, and other related information relative to any occupation. (54-492)

OPERATION

1. An action done as a part of practical work or involving practical application of a principle or process, esp. when experimental or involved in a series of actions; an act done as part of a plan. (59-2620)

OPERATION SHEET

1. An operation sheet is a type of instruction sheet that gives in order the steps required to perform an often recurring fundamental step in procedure. (44)
OPERATION SHEET (continued)

2. An instruction sheet that tells how to perform manipulative operations giving definite and specific instruction for performing the operation. (49-263)

3. Sheets that deal with the learning units involving the manipulative operations, skills, and gives definite instructions for performing the operations. (50)

PART-TIME

1. The term "part-time" as it relates to trade and industrial education, refers to instruction that is given during working hours. (54-492)

PART-TIME CLASSES

1. Classes held during a small part of the working day. eg. four or eight hours per week. (55-214)

PART-TIME COOPERATIVE EDUCATION

1. A form of part-time trade extension training based upon a working agreement involving cooperative relations between the schools and industry for purposes of training in accordance with which the learners spend approximately half time at school and half time in employment. (54-492)

PART-TIME COOPERATIVE TRAINING

1. Any plan of vocational training involving cooperative arrangements between schools and industry whether given on a four or eight hour or on a half time basis. (55-214)

2. Any plan of vocational training involving cooperative arrangements between schools and industry that calls for approximately equal time distribution between industry and the school that gives the related and non-vocational education. (55-214)

PART-TIME SCHOOL

1. Any school conducted for a limited number of hours during the regular working day, open to minors and adults who have entered upon employment, and its several aims are to continue neglected or interrupted elementary education and to prepare for entrance into better
occupations or to supplement and extend knowledge and skill in present occupations. (36-354)

2. Schools now being provided by various states, in which the pupil under sixteen or eighteen years of age who has left school to go to work must return to school for six or eight hours a week during the daytime. Three different types of instruction are provided as follows:

1. The general-continuation school
2. The trade preparatory school
3. The trade extension school

(23-238)

PAY-ROLL JOB

1. The name by which any worker is carried on the payroll. (2-526)

PICK-UP METHOD

1. A method of learning, without a systematic program for training, whereby the learner or so-called apprentice "picks up" from his associates the necessary information and skill during the course of his employment. (55-214)

PLACEMENT

1. The finding of work for the pupils of the schools who are entering employment either because of graduation or because of economic pressure in the home. (21)

2. Act of placing, or fact of being placed. (59-2620)

PLASTIC ARTS

1. These include brick and tile making, concrete construction, pottery, terra cotta and modeling. (3-116)

POLICING

1. To protect or keep in order by or as by police. To make clean and put in order, as a camp. (59-2620)

PRACTICAL

1. Available, usable, or valuable in practice or action;
capable of being turned to use or account; useful; as a practical acquaintance with a language. (59-2620)

PRACTICAL MECHANICS

1. Activities of a mechanical sort which confront men and women under normal living conditions. (54-190)

PRE-EMPLOYMENT TRAINING

1. Preliminary training in the basic principles or in introductory aspects of a trade to give familiarity with the simpler fundamental processes, to have a certain skill with the tools of the trade, and to know something of the science and theory underlying the practice of the trade. (54-214)

PREVOCATIONAL

1. A type of general education which will lay a better foundation for vocational courses than is commonly laid by the regular school. (28-245)

2. (Pre-Trade) A training in the elements of a number of activities or trades so that the pupil might have a basis for choice. (20-229)

PREVOCATIONAL SCHOOLS OR CLASSES

1. To give the pupil, while still in the elementary school, an insight into several different industrial lines, such as woodworking, metal working, printing, electricity, or commercial practice. By spending a short term of work in each branch he is supposed to be able to decide which one he prefers to follow for his life work, his choice being subject to the approval of his instructors. When the choice is made and he begins instruction in his chosen line, it then becomes VOCATIONAL training. (23-238)

2. (Opportunity school; Elementary Industrial School, Special School), a school for those whom the regular public schools have failed to reach, the "unadjusted" or "misfit" pupil.

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PREVOCATIONAL STUDY

1. A course of study usually taken as a part of a
general or non-vocational curriculum, that actually
functions later as a part of the preparation required
for a vocation, or a vocational curriculum, is called
a "prevocational" study. (source not recorded)

2. Prevocational studies consists of such "try-out" or
"finding", or "fore-taste" courses in a variety of
vocations as will give sufficient knowledge and experi-
ence upon which to base an intelligent choice of
future vocation. (source not recorded)

PREVOCATIONAL TRAINING

1. (Prevocational Study), A study, or course of train-
ing usually taken as a part of a general or nonvocational
curriculum, actually functions later as part of the
preparation required for a vocation, or for a vocational
curriculum. (52-143)

PROBLEM PROJECT METHOD

1. The selection and discussion of a project growing
out of the common problem and needs of boys, with the
privilege of allowing each pupil to work out the
sizes and details of the project to suit his individual
needs.

PROCESS

1. A series of actions, motions, or occurrences;
progressive act or transaction; continuous operation
or treatment. (59-2620)

PRODUCTION JOB

1. A job dealing directly with the product, that gets
the product one step further along in the manufacturing
process. (2-526)

PRODUCTION METHOD

1. The organization of a class somewhat on the factory
basis with foreman for each special group for quantity
production of some project. The jobs are routed
through the shop, so that the work of each group is
specialized, the groups being shifted frequently enough
to give each individual some experience with the
various machines, tools, and process. (56-397)

2. A method of teaching (as well as to shop organiza-
tion and management) that seeks to duplicate in the
school shop actual working conditions and standards as they exist in the trade or in industry and that involve instruction on productive work if not on a commercial product. (55-214)

**PRODUCTIVE PRACTICAL WORK**

1. Includes all forms of practical work as a part of vocational education, the material results of which are evident value to society. The services of interns in hospitals, of prospective work on a home farm, of shopworkers in city schools doing repair work on school buildings, of homemaking pupils taking charge of the preparation of meals for schools, etc., all represent forms of productive practical work. (51-587)

**PROJECT**

1. A constructive undertaking that is projected or planned in order to accomplish something. In this sense we speak of a project in reforestation, an irrigation project, a reclamation project, a transportation project, and a manufacturing project. (55-214)

2. A project in vocational education is a definite unit of instruction which combines practical or manipulative achievement with a definite enhancement of power to apply related technical knowledge. (51-587)

3. That which is projected or designed; something intended or devised; a scheme; design; plan. (59-2620)

**PROJECT SHEET**

1. A sheet presenting a problem involving execution and purposeful shop work having sufficient scope or extent actually to involve the essential step of the project method, namely purposing, planning, executing and judging. (55-214)

**RECAPITULATION METHOD** (discovery method)

1. The exhibition of a finished article followed by an analysis of the object, the pupils arriving at certain conclusions concerning its method of construction, proper tools and necessary processes to produce it. (56-297)

2. A method of teaching whereby the individual in his
personal development passes thru a series of stages which represent stages in the evolutionary development of the species. (15)

RELATED KNOWLEDGE

1. The ideational learning, or the theories necessary in planning and in forming analogies and in setting up hypotheses for the solution of problems. (50)

RELATED SUBJECTS

1. Those readings, lectures, and studies and exercises in mathematics, science, drawing and art, laboratory experimentation, etc., which furnish organized knowledge of, and practical insight into, the so-called "technical aspects" of vocations. (51-587)

2. Related subjects are those subjects which embody the related knowledge required for the successful continuation and promotion of an individual in a vocation. (37-293)

3. Those subjects one should know in addition to skill if he is to be successful in that vocation. (50)

RELATED TRADES

1. The various trades whose work is necessary for the completing of a project. (11-284)

RUSSIAN SYSTEM OF TOOL INSTRUCTION

1. A system based upon a carefully graded series of exercises. (54-214)

SEGREGATED CLASS

1. A class that is selected on the basis of a given kind of trade or industrial pursuit and the persons who compose the class have a common background of experience. (54-492)

SEMI-SKILLED TRADE

1. A vocation the practitioners of which are highly skilled in one specialized operation, often a part of a skilled trade, such as some special operation
of the machinists trade, as drill or press operator, planer hand, lathe hand, grinder, milling machine operator, etc. (37-293)

SHOP EXERCISE

1. A shop exercise is commonly considered to consist of doing or making something in order to develop trade or industrial skills and habits without any effort to have the product serve anything other than a training purpose. The product of doing or making something may be destroyed. (55-214)

SHOP PROJECT

1. Something that is made in the school shop, as for example a cookie cutter, a business card, a screw driver, an electric motor, or a radio set, all of which may contain essentially the same teaching content as shop exercises but have the additional advantage that they serve useful purposes when completed. (55-214)

SHORT UNIT COURSE

1. A body of teaching material small in measure, definitely bounded and arranged in a sequence, which leaves a pupil with more information, appreciation or skill. (19-412)

2. An intensive form of training and instruction which is intended to meet, in a limited number of lessons, a specific need of a particular group of learners. Each unit deals with some one teachable phase of a trade or other occupation, and is complete in itself. (51-587)

SKILLED MECHANIC

1. One who is master of all the processes of his trade with the ability to analyze and plan a method of procedure in doing a job, read drawings and specifications, make necessary calculations and know the underlying scientific facts concerned. (49-263)

SKILLED TRADE

1. That economic activity in the mechanical field which a person has learned, and in which he engages for procuring subsistence for himself and dependents.
A vocation in the mechanical field that usually requires for entrance a minimum of sixth grade education and a learning period varying from one to seven years. The practitioners are supervised in a general way, but not in regard to details, and they work for certain fixed hours for a specified wage based on time or amount of product produced. (37-293)

SKILLED WORKER

1. The worker in the modern manufacturing plant possessing a high and intensive, but not extensive degree of skill within a range of his task, having a small amount of responsibility. (48)

SLOYD

1. A system of a series of objects or projects, each complete in itself, and made to serve a real purpose in the home-life of a family. (54-492)

2. Sloyd is tool work so arranged and employed as to stimulate and promote vigorous, intelligent self-activity for a purpose which the worker recognizes as good. (source not recorded)

3. By the methodical handling of tools, the making of a hundred objects, forming a progressive series, the scholars are made to acquire skill - a general address of the hand, which renders them fitted on leaving the school, to undertake, under favorable conditions, the apprenticeships to any trade whatever, and to execute without assistance works of every kind which present themselves every instant in practical life. (54-492)

3. Skilled mechanical work, such as that required in wood carving; trade work. (59-2620)

SPECIAL TRAINING

1. Training, usually given for relatively short periods of time, that aims to prepare persons for specialized jobs or responsibilities. (54-214)

SUPERVISION

1. Act of overseeing; inspection; oversight. (59-2620)
TECHNICAL

1. Of or pertaining to the useful or mechanic arts or any science, business, or the like; specially appropriate to any art, science, business or the like; as, technical training, problems, skill, words.  

(59-2620)

TECHNICAL HIGH SCHOOLS

1. A school on the secondary level to train for the Junior engineering field—for such occupations as drafting, designing, testing, inspecting, estimating and supervising and to give pre-engineering training to those planning to continue on the college level.  

(54-492)

TECHNICAL INFORMATION

1. Those phases of industrial science and the basic principles upon which industrial machines, products and trade processes are built. (19-412)

TECHNICAL INSTITUTE

1. A vocational school of junior college grade. (4)

TECHNICAL INSTRUCTION

1. Instruction in the principles of science and art applicable to industries, and in the application of special branches, of science and art to specific industries and employments. (31-271)

TECHNICAL KNOWLEDGE

1. By technical knowledge is meant the information which is related to the vocation for which an individual is being trained. It is the information that enhances the skill and the general efficiency of the worker. (42)

TECHNICAL MANUAL ARTS

1. A form of manual arts emphasizing the teaching of proper form and development of good technic in conventional methods of procedure as developed thru race experience, and upon skill in execution. (20-229)
TECHNICAL SCHOOL

1. A school designed to give technical knowledge only, as that is involved in some recognized vocation or group of related vocations. (51-587)

TECHNICAL TRAINING

1. Instruction and development of dexterity for a particular branch of trade or industry. (25)

2. Training for occupation which require a high school education. (21)

TEXTILE ARTS

1. This includes spinning, weaving, braiding, dyeing, basketry, knitting, sewing, embroidery, garment making, a large number of processes fundamental in our civilization. (3-116)

THRESHOLD SCHOOL

1. A type of corporation school organized exclusively for a training or "breaking in" of new employees not apprentices. (36-354)

TRADE

1. The business which a person has learned, and which he engages in, for procuring subsistence, or for profit; occupation; esp. mechanical employment as distinguished from the liberal arts, the learned professions, and agriculture; as, we speak of the trade of a smith, of a carpenter, or mason. (59-2620)

TRADE ANALYSIS

1. Showing the work each occupation consists of, first, in practical jobs done with machines, hand tools, or just the worker's hand; and second, in inspectional, supervisory, and administrative duties that have for their purpose the smooth and efficient management of the productive work. (source not recorded)

TRADES EXPLORATORY

1. Those trades represented in a general shop that will
be of value in giving a picture of the trades that the pupils are likely to take up as a means of securing a livelihood. (34-190)

TRADE EXTENSION EDUCATION

1. Trade extension education, either full-time or part-time, consists in trade instruction that extends and amplifies knowledge or skill in the vocation in which the learner is already employed. (55-214)

TRADE EXTENSION SCHOOL

1. Pupil employed at an occupation in which he wishes to continue may receive instruction supplementary to his trade. (23-238)

TRADE EXTENSION TRAINING

1. That training which is given to persons already employed at a trade or occupation to which the instruction is related. (54-492)

TRADE EXTENSION VOCATIONAL EDUCATION

1. Education for those who have left school and "entered upon" the practice of their vocation and includes such types as (a) trade extension evening classes; (b) trade extension part-time classes; (c) dull season classes. (36-354)

TRADE PREPARATORY SCHOOL

1. For pupils with a reasonable grounding in general education and who wish to be prepared for employment at some definite trade. (23-238)

TRADE PREPARATORY TRAINING

1. Trade training that is given to persons employed or unemployed who have not yet entered the trade or industrial pursuit that they are learning. (55-214)

TRADESMAN

1. A mechanic or artificer, esp. one whose livelihood depends upon manual labor. (59-2620)
1. To drill or teach; to impart proficiency by discipline. To prepare one's self for a particular service or performance. (59-2620)

TRAINING

1. Act or process, by means of drill, practice, etc., of becoming proficient in some art or prepared for a test or contest, esp. of physical skill and prowess; the systematic development of one's strength and abilities; practice; exercise; also, state of being so proficient, prepared, and developed; as he was in perfect training. (59-2620)

TRY-OUT COURSES

1. Courses for the purpose of discovering and developing abilities and capacities along certain lines.*

2. Courses designed to sample, under the guidance of a teacher, different kinds of activities that are typical of modern industrial practice. (54-492)

3. Courses which compose a curriculum which is as rich and as broad as possible in its offerings so that pupils will have the opportunity to sample and try-out, under the guidance of the teacher, different kinds of activities that are typical of modern industrial practice. (54-492)

UNIT OF INSTRUCTION

1. The instruction unit deals with a principle or an operation that is more or less general in its application and is not limited to one particular job. (50)

UNIT OPERATION

1. An operation which requires some degree of skill in its performance, occurring with more or less frequency in practice and involving practically the same steps in its performance wherever found; or a group of steps occurring frequently, as a group. (48-111)

F. 123.
UNIT SHOP

1. The term "unit shop" is used to denote a type of shop organization where one teacher handles only one type of shop work, as for example, auto mechanics. If the shop is on a vocational basis in a day school it is known as a unit trade shop; if the instruction is given on an industrial arts basis it is simply referred to as a unit shop. (55-214)

2. A shop in which the instructor devotes his efforts to but one kind of type of shop work, aims to give specific trade training that will fit individuals in whole or in part, for wage-earning employment. (54-492)

UNIT TRADE SCHOOL

1. A unit trade school is an all-day or full-time trade school so organized that a pupil learns a single trade. Such a school aims to prepare persons for a trade and therefore is designed to give pre-employment training or trade preparatory training as it is also called. Instruction must be given for 30 hours per week, at least half of which is to be shop instruction. The instruction must be vocational in aim and character, the instructor must have the qualifications set up in the State Plan for Vocational Education for a vocational teacher, and the curriculum and teaching facilities must also be in accordance with the State Plan for Vocational Education.

A unit trade school may house a number of unit trade shops all different, as for example, printing, automotive repair, electrical, and machine shop, but one of the distinguishing features of the unit trade school is that only a single trade is taught to any one pupil. (55-214)

2. A unit trade school is a public trade or industrial school operated on an all-day or full-time basis and so organized that only one trade or parts of one trade are taught to each pupil. (54-492)

UNIT TRADE SHOP

1. A shop in which the instructor devotes his efforts to but one kind of type of shop work, aims to give specific trade training that will fit individuals in whole or in part, for wage-earning employment. (54-492)

UNSKILLED

1. Not skilled; not having, displaying, or embodying
skill. (59-2620)

UP-GOING TRAINING

1. Instruction that fits a worker for the next higher job. (54-492)

VESTIBULE SCHOOL

1. Training departments established by industries in which applicants for employment are put into training for a few hours, a few days, or at most a few weeks, and taught to perform the required operations and turn out the largest possible quantity of products. (23-238)

2. A type of corporation school organized exclusively for the training or “breaking in” of new employees not apprentices. (36-354)

3. A school set up by an employer or corporation to give short intensive training to beginners with the objective of preparing them to efficiently enter productive employment in that industry usually for their new job only. (54-492)

VESTIBULE TRAINING

1. Short intensive training given to beginners with the objective of preparing them to efficiently enter into production on their new job. (54-492)

VOCATION

1. A person’s economic employment, calling, occupation, trade, business, profession, including all means whereby people earn a livelihood. (37-293)

2. Regular or appropriate employment; calling; occupation; profession. (59-2620)

3. Originally, a task in life to which one was “called” either by Providence or Nature. It implied an imperious inclination and the necessary aptitude for the work. It has come to mean merely one’s chief employment. (15)

VOCATIONAL AGRICULTURE

1. The preparation of individuals who have indicated
a vocational choice in agriculture, for useful and efficient service in the occupation connected with the tillage of the soil, the care of domestic animals, forestry and other wage earning or productive work on the farm. (30-451)

VOCATIONAL AGRICULTURAL EDUCATION

1. Includes those forms of vocational education the direct purpose of each of which is to prepare students for some one of the agricultural occupations. Among agricultural occupations are those of agricultural laborer (in various varieties), dairymen, farmer or planter (many species), gardener, florist or nurseryman, stock raiser, bee keeper, poultry keeper, etc. (51-587)

VOCATIONAL COMMERCIAL EDUCATION

1. Those forms of vocational education the direct purpose of which is to fit for some recognized commercial calling, e.g. agent, bookkeeper, accountant, banker, clerk, typist, merchant and dealer, messenger, office boy, salespeople, stenographer, etc. (51-587)

VOCATIONAL HOMEMAKING EDUCATION

1. Includes those forms of vocational education the direct object of which is to fit for homemaking as practiced by the wife and mother in the home and also for some specialized forms as practiced by household employees, housekeepers, or other wage-earning assistants to the homemaker. (51-587)

VOCATIONAL INDUSTRIAL EDUCATION

1. Includes those forms of vocational education the direct purpose of each of which is to fit the individual for some industrial pursuit or trade. Among the trades and industrial pursuits enumerated by the United States census are those of the carpenter and joiner, mason (brick and stone), painter and varnisher, paper hanger, plasterer, plumber and steam-fitter, roofer and slater, oil-well worker, chemical worker, brick and tile maker, glassworker, etc. (51-587)

VOCATIONAL INDUSTRIAL TRAINING

1. Training exclusively in the necessary skills, and
manipulation of tools, materials, and processes, for the purposes of increased production. (36-293)

VOCATIONAL PROJECT

1. A project in vocational education is a definite unit of instruction which combines practical or manipulative achievement with definite enhancement of power to apply related technical knowledge. (55-214)

VOCATIONAL SELECTION

1. The discovery of one's present fitness for an occupation. (13)

WAGE EARNERS

1. All persons who are employed in production with a view to the profit of their employers, and are paid at stipulated rates. (32-1082)

WORKER

1. One that works; specif. A maker; creator. A laborer; a toiler; performer; doer. (59-2620)
Appendix C

BIBLIOGRAPHY FOR PUBLISHED DEFINITIONS
APPENDIX C

BIBLIOGRAPHY

for

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