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BUREAU OF EDUCATIONAL RESEARCH
COLLEGE OF EDUCATION

A STUDY OF SUPERVISED STUDY

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PREFACE

This bulletin illustrates a type of educational research which is much needed. A multitude of "original" studies have been reported in our educational periodicals and in bulletins and monographs, but very few critical summaries of such work are to be found. The literature on many educational topics is now so vast that very few students can find the time to read it. If waste is to be avoided, summaries must be prepared in order that the results of "original" studies may be sufficiently accessible to teachers, principals, superintendents, and other students of Education.

The need for *critical* summaries of our educational literature is even greater than the mere vastness of it indicates. Unfortunately, a considerable portion of what has been written has little value and in some cases reports of "original" studies are misleading, if not erroneous. Doubtless, Mr. Brownell's conclusion in regard to the general character of the literature relating to supervised study would apply also to the literature on other topics. In the concluding chapter of this bulletin he says, "it must be admitted that an unfortunately large amount of writing on supervised study is repetitious and, to put it mildly, futile . . . Many of the investigations of supervised study appear to represent much wasted effort since it is unnecessary to prove the obvious."

Mr. Brownell has rendered a distinct service by preparing a critical summary of over 450 pages of material relating to supervised study, and it is hoped that the publication of this "Study of Supervised Study" will encourage students of Education to undertake similar studies of the literature on other topics.

WALTER S. MONROE, *Director*.

April 17, 1925.



A STUDY OF SUPERVISED STUDY

CHAPTER I

INTRODUCTORY STATEMENT

The problem. During the past fifteen years, a very large place in educational literature has been occupied by discussions of the theory and practice of supervised study. In the appended bibliography magazine articles which total more than 450 pages are listed, and these represent no more than a small sample of the total literature on this topic.

In this bulletin we are interested in discovering what is being said and written about supervised study as it applies to the secondary school. Our plan is not to present a mere summary of the printed matter on the subject, a compilation, as it were, of the opinions of this and of that writer; but rather to assume throughout a critical attitude which will look into the evidence for the conclusions reached by the writers.

General plan of report. After discussing the meaning of the term supervised study as it is found in the literature, and after defining the terms which will be employed in this report, the discussion will be carried on under the following heads:

The Technique of Supervised Study.

The Merits of Supervised Study.

A. Merits claimed on the basis of opinion. ---

B. Merits claimed on the basis of experimentation. ---

Concluding Statement.

Variations in meaning of "supervised study." Our first task is one of definition. Manifestly we must define "supervised study" before we can reasonably attempt an evaluation of this phase of school procedure. This matter of definition is the more necessary because of lack of agreement in the common use of the term. Even the most cursory reader of the literature on the subject must be struck by the diverse connotations for the term in the hands of different writers.

One writer uses "supervised study" to denote a form of school procedure in which all formal recitations are eliminated. A second writer uses the same term to designate the practice of lengthening the traditional school period and of dividing it in such a way that the first part is devoted to recitation and the latter part to study under the direction of the teacher. A third writer says nothing at all of the division of school time when he speaks of supervised study, but means merely the guidance of the pupil's study by the teacher.

New terms to replace "supervised study." Of late there has appeared in educational writings evidence of a dawning appreciation of the significance of the ambiguity surrounding the concept of "supervised study;" and a number of educators have suggested the abandonment of the old term in favor of some new one.

Among these proposed substitutes for "supervised study" we find (a) "supervised learning," suggested by Inglis,¹ (b) "directing study," sponsored by Miller,² (c) "directed study," used by Burr³ and Morrison,⁴ and (d) "supervision of study," employed somewhat generally in literature.

For these newer terms two advantages are claimed, the one negative and the other positive. The negative advantage is the fact that the substitution of a new name serves to eliminate certain non-essential implications which through careless usage have become connected with the old term. The positive advantage is that the new name centers the emphasis and the attention upon the more important ideas in the procedure.

Two important facts resulting from analysis. We may note two facts of some importance. In the first place, writers on supervised study do agree on one essential point—the immature pupil needs some sort of guidance in study. This guidance, all agree, has not been sufficiently furnished. Under the traditional order of school procedure, the child without direction acquired as best he might all that he could, while the teacher's task consisted most largely in assigning lessons and in measuring the quality and the quantity of the pupil's achievement.

¹INGLIS, ALEXANDER. *Principles of Secondary Education*. Boston: Houghton Mifflin Company, 1918, p. 713.

²MILLER, H. L. *Directing Study*. New York: Charles Scribner's Sons, 1922. 377 p.

³BURR, A. W. "Directed study." *School Review*, 27:90-100, February, 1919.

⁴MORRISON, HENRY C. The term "directed study" is employed by this writer in several places in the articles listed in the bibliography.

In the second place, their disagreement regarding the meaning and use of the term "supervised study" may in part be accounted for. This confusion seems to be due principally to two causes: a difference in the angles from which various writers have looked upon supervised study; and a failure to discriminate consistently between two essentially different phases of supervised study.

Confusion caused by differences in writers' points of emphasis.

Involved in any scheme of supervised study are the three agencies—teacher, pupil, and administrator. We find some writers emphasizing the place of the teacher in supervised study, and in this case, supervised study becomes a method of teaching.⁵ Others write from the standpoint of the pupil, and here the development of economical and effective habits of study is considered the primary aim of supervised study.⁶ By far the greatest number of writers, however, view supervised study through the eyes of the administrator. In this sense, the term is used to denote a part or the whole of some administrative measure—equivalent, in many cases, to the notion of individual instruction, or the lengthened period, or the divided period. This use of the term is especially conducive to ambiguity and to consequent confusion of thought.

It is at once apparent that these different points of view do not supply meanings for supervised study which are totally unrelated. All overlap to a greater or less extent. Thus, when the chief consideration is administrative, supervised study will still necessarily imply certain procedures which concern the pupil and the teacher.

Confusion caused by failure to discriminate between different phases of supervised study. While much of the ambiguity regarding the meaning of supervised study may be attributed to the cause just discussed, a more important source of confusion is to be found in a general failure among writers to keep in mind the essentially complex nature of supervised study. In any scheme whatsoever for supervised study there are two fundamentally different aspects: (1) the direction of the pupil in study; (2) the form of school organization established to facilitate the administration of this direction.

⁵KOOS, LEONARD V. *The Junior High School*. New York: Harcourt, Brace, and Howe, 1920, p. 153.

⁶HALL-QUEST, ALFRED L. "The direction of study as chief aim of the high school." Chapter X. *The Modern High School*, edited by Charles H. Johnston. New York: Charles Scribner's Sons, 1916, p. 265-94.

That the two are very closely related is obvious; the first, guidance, is naturally dependent upon some plan of school organization for execution. But the fact that these two aspects are not identical nor mutually inclusive in significance and implication is not commonly recognized.

The statement that the primary purpose of supervised study is to give the pupil a form of guidance which he really needs in order to acquire adequate habits of study would probably go unchallenged; and yet we find all too frequently that the machinery of administration, which is but the vehicle to serve the prime purpose, assumes the position of major consideration in theory and practice. In educational literature, the technique of administration—distribution of time within the period, disposition of the recitation, and the like—is much discussed, while matters regarding the actual help in study, which is the reform demanded, receive only incidental treatment. The “side show” has swallowed up the “main show.”

Terms used in report. A clear definition of the terms to be used in this report is necessary in order to avoid the very confusion which is prevalent in educational literature on supervised study. Three terms, growing out of the analysis of the nature of supervised study, are to be used.

1. “Pupil-direction.” The essential element in supervised study is the supplying of proper guidance to the learner in acquiring efficient habits of study. This element will be designated as “pupil-direction.”

2. “Technique.” To refer to the second of the elements, that is, the formal procedure by which the school as an institution furnishes this pupil-direction, the term “technique” will be used. The chief aspect of technique is, of course, administrative. The technique of supervised study will be found to take various specialized forms, and in order to differentiate between these, a descriptive word or phrase will be employed as seems appropriate.

3. “Supervised study.” The old term “supervised study” will be retained to represent *any* possible combination of the two elements, “pupil-direction” and “technique.” Its connotation will be anything but specific, and it will be employed as a very general term wherever careful discrimination between the two fundamental elements is unnecessary.

Re-statement of the problem. At the outset, the purpose of this report was stated to be an analysis and evaluation of supervised study in the secondary school as disclosed in periodical literature. The terms defined in the preceding paragraphs make possible a more restricted definition of the problem. The first of the elements in supervised study, pupil-direction, will be treated only incidentally; the second, technique, will receive primary consideration.

CHAPTER II

THE TECHNIQUE OF SUPERVISED STUDY

Forms of supervised-study technique varied. One usually reads of supervised study as of a single, simple, unvarying form of school procedure. That is, there seems to be in educational literature an implicit assumption that supervised study is the same wherever found—that if two schools have made provision for supervised study, the two situations in all respects will be approximately identical and the results, equivalent. When, however, the reader turns to a more careful consideration of the technique of supervised study, he discovers that the usual impression has little foundation in fact. Instead, he finds several complex, variable forms of practical school organization to administer pupil-direction. Thus, Willett¹ mentions nine forms, Hall-Quest,² fourteen, Hines,³ eight, and so on. In fact, the periodical articles examined supply a total of fourteen types of technique sufficiently different to be classified separately. If we were to add to these main types several subtypes, which by reason of modifications in procedure would certainly alter the results obtained, the list would easily mount to twenty-five or thirty. The exact number is unimportant—the essential point is that all of these various forms are labeled by the one term supervised study.

Types of technique. The fourteen main types of technique are listed and described very briefly in the following pages. In a number of the cases, especially the first two, the possibility of variation within the type is illustrated.

1. Special study halls. In this plan, the study period is separated from the recitation. The students segregated for study occupy either (a) large assembly halls or (b) special small rooms, holding perhaps thirty pupils (the latter plan known as the "East Cleveland" or

¹WILLETT, G. W. "Supervised study in high school," *School Review*, 26:259-72, April, 1918.

²HALL-QUEST, ALFRED L. "The direction of study as the chief aim of the high school," Chapter X, *The Modern High School*, edited by Charles H. Johnston. New York: Charles Scribner's Sons, 1916. p. 265-94.

³HINES, H. C. "Supervised study in the junior high school," *School and Society*, 6:518-22, November 3, 1917.

“neighborhood room” form of supervised study). Within these rooms the students proceed with study under the direction of either (c) special study teachers or (d) regular teachers who may be assigned study-hall duty as part of their daily programs. It will be noted that within this general type of technique, four special types may be devised by adopting various combinations of the factors (a), (b), (c), and (d).

2. The conference plan. This form of technique is planned to provide direction in study for individual pupils, usually the backward. Here too a number of varying forms may be recognized. The conference may be (a) voluntary or (b) required, (c) for all the pupils or (d) for only those who are behind in their work; it may be held (e) at stated times or (f) by appointment (g) within the regular school hours or (h) after school, (i) with special teachers set aside for the particular task or (j) with the regular teachers of the courses in which directed study is being given. Clearly a very large number of special types of technique could be worked out with these variables.

3. The DeKalb plan. The school program under this plan provides one period a week for the supervision of study, all the other periods being for the usual purposes of recitation and undirected study.

4. The Pueblo plan. This technique goes to the opposite extreme from the DeKalb plan just described. In the Pueblo plan, which was devised by Superintendent Preston Search, all recitations are abolished, and the whole school day is devoted to study under the direction of teachers. This represents a return to individual instruction par excellence.

5. Daily extra period. This plan which, according to Willett,⁴ was used at Des Moines, Iowa, as early as 1906, and later at Pottstown, Pennsylvania, provides, as its name implies, an extra period each day for the preparation of work under supervision. All pupils with a standing of 90 percent or better, however, are excused from this extra period and are dismissed at the end of the regular school day.

A variation of this plan called the “study class,” in which each department regularly supplies a teacher for coaching the backward

⁴WILLETT, G. W. “Supervised study in high school,” *School Review*, 26:259-72, April 1918.

pupils in an extra period, is reported by Harris.⁵ Another adaptation of this general technique is described by Nielson⁶ under the name "deficiency period."

6. Differential plan. In this supervised-study technique the teacher is given large discretionary powers. There are no specific requirements regarding the amount or the nature of the pupil-direction to be given. Such matters are left entirely to the judgment of the teachers, the understanding being, however, that a certain amount of guidance shall be given. One feature of the plan as described by Burr,⁷ though not under the above name, is the practice of furnishing pupils with printed cards of directions on study.

7. The double period. The essential idea here is that two regular periods are assigned to each of the high-school subjects, in one of which the pupils recite and in the other of which they study. The common practice seems to be to assign two teachers to each subject, one being in charge continuously of study and the other, of recitation. This results in a definite break being made between these two phases of the pupil's activity.

Some authorities assign the credit of the procedure to Superintendent J. Stanley Brown, of Joliet, Illinois. A description of the technique under the name "the laboratory-recitation plan" is given us by Superintendent I. M. Allen⁸ of Springfield, Illinois. The original supervised study technique, worked out by Superintendent Kennedy at Batavia, New York, and hence known as the "Batavia plan," appears to have been of this general type.

8. The divided period. This technique, in one or another of its many forms, is probably the most widely used. It differs from the double-period plan in that: first, customarily but one teacher is in charge of the group for both study and recitation in the same school subject; and second, the class activity is maintained as a unit, without a break between recitation and study. Usually it involves the lengthening of the class period and hence is sometimes described as the "lengthened-period" plan.

⁵HARRIS, G. L. "Supervised study in the University of Chicago High School," *School Review*, 26:490-510, September, 1918.

⁶NIELSON, C. H. "An innovation in supervised study," *School Review*, 25:220, March, 1917. (Editorial comment.)

⁷BURR, A. W. "Directed study," *School Review*, 27:90-100, February, 1919.

⁸ALLEN, I. M. "An experiment in supervised study," *School Review*, 25:398-411, June, 1917.

There is the widest variation in this plan from the standpoint of (a) length of period and (b) distribution of time within the period. On the first point, we have periods running from fifty minutes to over one hundred, with the commonest practice probably at about sixty minutes. On the second, utilization of time, we have the full course of possibility from the one extreme where the teacher employs the class time as she wishes, to the other extreme, where the period is definitely laid out into a number of sub-periods, each of which is intended for a certain type of activity. As an instance of this latter, we have the following:⁹ "recapitulation, five minutes; statement of the business of the day, two minutes; discussion, twenty-five minutes; assignment, five minutes; study period, twenty-five minutes." Probably the commonest procedure is to divide the lengthened period roughly into halves, the first being used for recitation, and the second for study.

What is sometimes called the "Merriam plan" and other times the "Columbia plan"¹⁰ belongs to this general type of technique, its chief difference being the prominence given the assignment. One-third of the period is taken up by the teacher for this purpose.

9. The Seattle plan,¹¹ or the supervised-home-study plan. While somewhat like the divided-period plan, the Seattle plan differs in its attitude toward home study. Steps are taken to direct the study at home by means of definite instructions in procedure, specific tasks to be accomplished, and the like.

10. The University High-School plan, of the University of Chicago. Here, practically the whole period is devoted to study under the direction of the teacher. In this respect it resembles the Pueblo plan. The work in the University High School is laid out into what are called "units," which vary in length, usually from two to five weeks, with the particular subject and the type of topic. At the conclusion of the period devoted to any one unit, the amount of time depending upon the ability of the pupil, opportunity for a form of recitation is given, when "floor talks," papers, and so forth may be presented.

⁹YOUNG, EULA, and SIMPSON, M. R. "A technique for the lengthened period." *School Review*, 30:199-204, March, 1922.

¹⁰MERRIAM, EUGENE E. "Technique of supervised study," *School Review*, 26: 35-38, January, 1918.

¹¹COLE, THOMAS R. "One year of supervised study," *School Review*, 25:331-35, May, 1917.

The Wisconsin High School, of the University of Wisconsin, follows a similar procedure: the "units" are called "challenges," and there is specific effort to secure motivation through the grading system.

11. The graduated plan. This plan devised by Superintendent Paul Stetson,¹² at Grand Rapids, Michigan, differs from all others in its appreciation of the varying needs of pupils in successive grades for direction and help in study. Thus in the seventh grade, thirty minutes are given to recitation and thirty to study; in the eighth grade, the ratio of time for recitation to study is 35:25; in the ninth grade, 40:20; and in the last three years, or the senior high school, 45:15. Beginning with the ninth grade, provision is made for a "consultation period" of thirty minutes a day to take care of the backward.

12. Study coach. Hall-Quest¹³ lists as a form of supervised study the practice of providing the high school with one or more special teachers whose sole task is to train pupils in study-methods.

13. Review groups. In the same reference, Hall-Quest describes as supervised study the segregating of backward children into special groups for instruction. The idea here is probably the same as that mentioned by Hines¹⁴ under the name, "delayed-group plan."

14. Printed directions. Hines, in the article cited, also regards as a form of supervised study the practice of supplying to pupils directions for study, such as the study programs recommended by Reavis.¹⁵ Such a procedure, if it stops at this point, is certainly a far cry from the elaborate plans for the immediate direction of study called for in other schemes which we have briefly reviewed.

Significance of the list. In this list of fourteen distinct types we have, on the one hand, a very complex technique which calls for a period of definite length, every day in every school subject, divided into sub-periods of time, each of which is to be utilized for a specific purpose; and, on the other, the practice of giving pupils printed direc-

¹²STETSON, PAUL C. "A survey of supervised study," *The American School Board Journal*, 54:19-20, 85-86, June, 1917.

¹³HALL-QUEST, ALFRED L. "The direction of study as the chief aim of the high school," Chapter X. *The Modern High School*, edited by Charles H. Johnston. New York: Charles Scribner's Sons, 1916, p. 278.

¹⁴HINES, H. C. "Supervised study in the junior high school," *School and Society*, 6:520, November 3, 1917.

¹⁵REAVIS, W. C. "The importance of study programs for high-school pupils," *School Review*, 19:398-405, June, 1911.

tions on how to study. In between these two extremes there are from a dozen to a score of other schemes of all degrees of complexity and definiteness, but all, be it noted, parading under the name of "supervised study."

If the advisability of recognizing the hybrid nature of that which we call supervised study has not been clear before, it certainly should be now. Essentially, the only point of agreement in all these forms or types of technique is their purpose to provide means for guiding the pupil in his learning activities. From this common origin spring all sorts of special techniques for the achievement of the end. The whole becomes complicated out of all semblance of its origin through administrative manipulation until the term supervised study as commonly employed has very little if any meaning.

Variable factors. We have taken one means of showing the impossibility of ascribing practical identity of procedure and of results to schools which purport to be using supervised study. Our method has been to describe *in gross* various techniques for administering pupil-guidance in study.

We may take another method, somewhat more direct, to illustrate further the possibility of variability in the practice and in the results of supervised study. We shall here analyze the problem more carefully with a view to isolating certain *specific* factors which may vary in different situations. The analysis will be suggestive rather than exhaustive. Three types of variable factors are recognized: 1, those that may vary between schools; 2, those that may vary between types of technique; 3, those that may vary within a single type of technique in the matter of pupil-direction. Each of these types of factor will be made clearer by subsequent discussion.

1. Variable factors between schools. Let us assume that two school systems adopt the same type of technique for supervised study. There will still be present a number of factors sufficiently different in the two schools to make doubtful identity in procedure or in results. Of these we may mention five, the influence of which is obvious:

- (1) Material facilities.
- (2) Type of pupil-material.
- (3) Particular curricular requirements.
- (4) Teaching personnel (factors other than those involving directly teaching study-habits).
- (5) School standards.

2. Variable factors between types of technique. Assuming now that the two school systems in our hypothetical case are practically identical in the factors above mentioned, but that they adopt different types of technique, we may expect variation in the two systems from the following factors:

- (6) Unit of instruction—the individual pupil, or groups of pupils.
- (7) Type of pupil supervised—the backward, or all the pupils.
- (8) Type of teacher directing study—special study teachers, or the regular teaching staff.
- (9) Nature of the group of pupils supervised—all studying the same type of material or different types of material.
- (10) Frequency of periods of supervision—direction of study in every period or the number of such periods left to discretion of teacher.
- (11) Length of period of supervised study—from 45 or 50 minutes to over 100 minutes.
- (12) Attitude toward home study—home study eliminated, reduced in amount, or retained in full; if retained, directed or undirected.
- (13) Relation to the recitation—the recitation eliminated, retained in full, or reduced in importance.
- (14) Attitude toward study outside the period of direction—such study discouraged, permitted, or even encouraged.
- (15) Use made of the period of directed study—for review only, or for advance work.
- (16) Amount of discretion left individual teachers.
- (17) Material facilities demanded.
- (18) Length of school day.
- (19) Relation of directed study to grade in school.¹⁶
- (20) Distribution of supervised study by subjects—mathematics, for example, seems especially receptive to the newer procedure, according to some writers, and history much less so.
- (21) Directions regarding the teacher's activity in guiding pupils in study.

¹⁶DAVIS, CALVIN O. *Junior High School Education*. New York: World Book Company, 1924, p. 44.

Davis insists that supervised study should be concentrated in the junior high school, and the amount of such study reduced progressively in the higher years and in the senior high school. This fact is recognized in the "graduated plan" described earlier.

3. Variable factors within a single type of technique. Important as are all the preceding variable factors, they are certainly less important than the sources of variation which enter when we consider what is done by the teacher in the way of directing pupils' study.

Let us assume that it were possible to standardize all the conditions affecting the two schools under discussion, including the type of technique adopted for the administration of pupil-guidance in study. We should still have to recognize the huge differences that are possible in the utilization of the time set aside for the direction of study. Here we are dealing directly with the human elements of teacher and pupil, which are characterized by variability. This statement probably needs little defense, for it is a matter of ready observation that teaching varies regardless of subject-matter, regardless of material conditions, regardless of technical control.

From this source then, we may add to our list of variables the following:

- (22) Teachers' knowledge of the psychology of learning and of individual differences.
- (23) Teachers' ability to apply this knowledge to the needs of pupils in aiding them to build up effective study habits.
- (24) Teachers' attitude toward the direction of study.
- (25) Teachers' devices for motivation.
- (26) Teachers' methods of measuring achievement.
- (27) The whole question of pupil attitude.

Our list of variables has reached twenty-seven; some are left far short of complete analysis, and still other variables might easily be found. Enough, however, have been listed to serve our purpose.

Summary. In this chapter we have noted the numerous types of technique by which pupil-direction is administered, and the large number of variable factors which are involved in the practical application of the supervised-study procedure. The inferences from such a survey are that, on the administrative side, the term "supervised study" means nothing at all specific, definite, or clear, and that any general statements made about it as a single, simple form of school practice must be critically examined.

CHAPTER III

MERITS OF SUPERVISED STUDY

In one form or another, supervised study is to be found in a large percent of the secondary schools of the country at the present time. While supporting statistics are not at hand, the supervised-study movement probably is still gaining rather than losing ground; for, as Koos¹ points out, the tendency to question its value is on the decline.

We are then led to raise the question: *Why* is supervised study so popular? Is it an educational fad which is destined soon to go the way of other fads, or is its growth in practice based upon demonstrably sound values which insure continued use and increasing adoption? In other words, what are the special merits of supervised study?

History of supervised-study movement. The history of the supervised-study movement, to which we can give only a word, supplies something of an answer to these questions, indicating in a general way that supervised study meets a real need.

There is probably nothing essentially new about the element, pupil-direction; good teachers always have realized the limitations of their pupils in the matter of study and have supplied guidance. The supervised-study movement has contributed chiefly by making such study-direction more general, more systematic, and more intelligent.

Parker² has traced the development of supervised study on the side of technique, showing its modest beginnings through what may be described as an accidental success at Batavia, New York, under Superintendent Kennedy. Impetus was given the movement by the popular outcry at the time against the necessity of home study and by the experimental investigations of Reavis³ and Breslich,⁴ who

¹KOOS, LEONARD V. *The Junior High School*. New York: Harcourt, Brace, and Howe, 1920, p. 153.

²PARKER, SAMUEL CHESTER. *Methods of Teaching in High Schools*. Boston: Ginn and Company, 1920, p. 393-402.

³REAVIS, W. C. "Factors that determine the habits of study in grade pupils," *Elementary School Teacher*, 12:71-81, October, 1911.

⁴BRESLICH, E. R. "Teaching high-school pupils how to study," *School Review*, 20:505-15, October, 1912.

proved that home conditions are not always conducive to effective study and that directed school study produces measurably superior results.

The rapid spread of the supervised study procedure during the last fifteen years is due undoubtedly to the operation of a number of influences; such as, the increasing realization of the facts and the implications of individual differences, development of new methods of teaching, changing conceptions of the ends of education, advances in applied psychology, closer study of the problems of educational administration, and the like.

Basis of claims for supervised study. We are not so much interested, however, in learning the general historical reasons which may be assigned for the success of the supervised-study movement as we are in finding out the specific claims advanced by various writers for the new procedure. Our study of the merits of supervised study falls naturally under the following heads:

- A. Merits claimed on the basis of opinion.
 - 1. Individual opinion. —
 - 2. Consensus of opinion. —
- B. Merits claimed on the basis of experimentation.
 - 1. Crude experimentation—purely statistical.
 - 2. Controlled experimentation. --

Not all of the articles canvassed for material on the topic can be placed finally in one or another of the above groups. Where the content of a particular article relates to more than one of the above rubrics, it is treated in the various proper connections. The discussion from this point will follow the outline suggested.

A. MERITS CLAIMED ON THE BASIS OF OPINION

1. Individual opinion.

The proponents of supervised study are by no means slow to advance claims of superiority for the new over the traditional study-recitation type of procedure. In the survey of the educational literature covered in this paper, we find thirty-four specific merits of supervised study. These claims are listed below. No attempt has been made to assign authorities for the statements; many are made by more than one writer, others as here given have been re-worded from a number of similar statements by different writers. While even with this revision there still remains a certain amount of overlapping, the claims are relatively distinct.

- (1) Supervised study insures specific rather than incidental instruction.
- (2) Supervised study makes the school program flexible and admits of easy and quick adjustment to unusual circumstances.
- (3) Supervised study assures a more definite, a more complete assignment.
- (4) Supervised study reduces, eliminates, or improves the quality of home study.
- (5) Supervised study recognizes in practice the facts of individual differences in pupil ability, assuring more adequate attention especially to the needs of the duller pupils.
- (6) Supervised study shortens lessons and therefore affords opportunity for more intensive drill on the shortened lesson.
- (7) Supervised study provides the teacher an opportunity to treat intensively and extensively new topics or bodies of material.
- (8) Supervised study dignifies studying and learning in the eyes of the pupil and therefore enlists his greater effort.
- (9) Supervised study enables the teacher to give both the general and the specific guidance necessary, rather than limiting her to the more general type alone as under the older procedure.
- (10) Supervised study makes the teacher take a different attitude toward the pupil—the individual becomes the unit of instruction. By coming into closer contact with the pupil, the teacher approaches him on a new and desirable level.
- (11) Supervised study gives the pupil a new view of his teacher, as a friend and guide; he consequently takes greater interest in his school work.
- (12) Supervised study makes it possible to encourage special ability to a greater extent than formerly, through the assignment of extra tasks of interest to brighter pupils.
- (13) Supervised study actually causes a saving in time, for it means study under skilled direction rather than idleness under conditions which provide little or no guidance or encouragement.

- (14) Supervised study secures the more complete motivation of learning; the pupil has his interest aroused through rivalry with a successful friend.
- (15) Supervised study makes the classroom a place for something more than lesson-hearing; there is less attention to testing and more to learning.
- (16) Supervised study regularly results in the improvement of the quality of work.
- (17) Supervised study reduces the number of failures and the amount of elimination.
- (18) Supervised study makes possible the giving of help *when* and *where* needed, and thus assures a continuous checking up on results and progress.
- (19) Supervised study improves the study habits of the pupils.
- (20) Supervised study brings about a better distribution of marks.
- (21) Supervised study fills the pupil with eagerness to go beyond the immediate task; makes knowledge for its own sake a desirable end to the pupil.
- (22) Supervised study makes possible sound educational guidance.
- (23) Supervised study supplies dependable data for vocational guidance.
- (24) Supervised study represents a return to fundamentals in teaching; puts the emphasis on the right phases of teaching, and hence elevates and dignifies the profession.
- (25) Supervised study develops school spirit.
- (26) Supervised study fosters and encourages the qualities of
✓ good citizenship among pupils such as cooperation, self-reliance, initiative, and the like.
- (27) Supervised study makes possible the teaching of worthwhile units of material as projects that challenge the best in the pupil.
- (28) Supervised study forces the teacher to make a study of study, and therefore of learning, and leads directly to better teaching.
- (29) Supervised study is very popular—with teacher and pupil alike.
- (30) Supervised study removes many of the difficulties of discipline.

- (31) Supervised study enables the teacher to handle more pupils.
- (32) Supervised study eliminates the lazy teacher.
- (33) Supervised study enables a class to cover more ground.
- (34) Supervised study develops the pupil's character by providing more "situations" (meaning of the term "situations" not made clear).

Criticism of the list. One can hardly read such an array of claims for anything, much less for an educational procedure, without entertaining strong doubts concerning their validity. The general implication in the list of claims advanced for supervised study is that we have in this new procedure the panacea for most of our educational ills. The reader who is inclined to be critical will, however, find a great deal to question in the claimed merits of supervised study. We shall consider five possible objections.

First, the claims are made as if they must inevitably follow upon the introduction of supervised study into a school system. There is the implicit assumption that supervised study works by magic. The enterprising administrator needs but to pen an order for the instituting of supervised study and over night all of the stated advantages of the new procedure put in their appearance. Any such implication is, of course, absurd. There is nothing inherent in the technique of supervised study which can possibly guarantee successful functioning. The important factor in the situation, as in all school situations, is the teacher. Under supervised study, the quality of work *may* be raised, pupils' ability to study *may* be improved, and so forth, provided that the teacher directs her activity and that of the pupils toward these ends.

Second, these claims are made for supervised study as if it existed in but a single form. Our earlier discussion has shown the falsity of any such assumption. It is little short of ridiculous to make general claims of virtue for *all* the forms of supervised study, for certain advantages may accrue to one form but be entirely absent in others.

Third, some of the claims are inconsistent with each other. We may cite the conflicting statements that supervised study permits more ground to be covered and that it is responsible for shorter and more intensively treated lessons.

Fourth, others of the claims may well be doubted on the face of them; for instance, the statement that supervised study enables

the teacher to handle more pupils. It is safe to say that while this may be true from the "technique point of view," it is utterly false when the essential element in supervised study—namely, pupil-direction in learning, is considered. Certainly, once an optimum number of pupils has been passed, the teacher's effective attention to the needs of the individuals in her group must suffer. Another such claim is that supervised study eliminates the lazy teacher. This much-to-be-desired state of affairs can hardly be attained in any such fashion if it can be attained at all. As sometimes administered, supervised study may actually increase the happiness of the lot of the lazy teacher.

Fifth, many of the claims for supervised study might likewise be made and with equal validity for the traditional type of procedure. For example, what is there about supervised study which necessarily develops school spirit, builds character, inculcates the ideals and attitudes of the good citizen more effectively than can be done by a good corps of teachers under the older form of organization?

2. Consensus of opinion.

Five studies based upon questionnaires will be treated in order to discover what those who are most directly and vitally concerned with the practice of supervised study—the pupils, teachers and principals—think about—the new procedure. After a brief description of the nature of these articles, the data concerning the opinions of the teachers will be presented in tabular form; those of the pupils and of the principals will be handled in a paragraph or two, since there have been reported only two studies for each.

Description of articles. Cole's⁵ article reports the attitude of sixty of his teachers after one year's trial with the following plan of supervised study; the school day was divided into five sixty-minute periods, the time within the periods being apportioned roughly according to the needs of the particular subjects—as forty minutes for recitation and twenty for study in the "academic" subjects. Home study was not eliminated, but was directed as far as possible. Extra assignments were given the brighter pupils.

Willett⁶ addressed his questions to 532 pupils and twenty-nine teachers after a four-year trial of some undescribed form of super-

⁵COLE, THOMAS R. "One year of supervised study," *School Review*, 25:331-35, May, 1917.

⁶WILLETT, G. W. "Supervised study in high school," *School Review*, 26:259-72, April, 1918.

vised study in a six-year high school. The length of the try-out period furnishes a more reliable basis for estimate than in most of the studies reported.

Proctor⁷ sent questionnaires to the principals of forty-two Pacific Coast high schools, where, for the most part, the double-period or the divided-period type of technique was employed. Of this number thirty-one replied.

Erickson⁸ tried out a double-period plan of supervised study—five eighty-minute periods a day—for six months, and then questioned his pupils regarding their attitude toward the innovation. The shortness of the try-out, however, places definite limitation on the value of the opinions given.

Brown and Worthington⁹ have contributed the most recent study of this type, following their cooperative experimentation with five Wisconsin high schools. The trial period of supervised study in the different schools varied, but in none did it last more than four and a half months. At the end of this time, opinions were secured from five principals, eight teachers, and a number of pupils.

Attitude of pupils. We may now turn to a consideration of the pupil-attitude toward supervised study. Willett⁷ found that 94 percent of his 532 pupils preferred the supervised-study technique to the traditional form of school organization, and Erickson reported 78 percent of his pupils (the number is not given) as similarly inclined. Keeping in mind the limitations of opinions in general, and of those collected by questionnaires in particular, we still seem to be safe in saying that supervised study is popular with the pupils. Erickson also found that 56.5 percent of his pupils believed they did their best studying at school. Comparing the quality of their work under supervised study with that of the preceding year under the usual organization, 31 percent of the pupils, according to Erickson, thought they did better work under the new plan; 42 percent noticed no difference; 19 percent thought they did worse. All was not clear gain then in the minds of the pupils. Forty-nine percent of the pupils thought they put a smaller total amount of time on study with the

⁷PROCTOR, W. H. "Supervised study on the Pacific Coast," *School and Society*, 6:326-28, September 15, 1917.

⁸ERICKSON, J. E. "The results of supervised study in the Houghton, Michigan, High School," *School Review*, 24:752-58, December, 1916.

⁹BROWN, W. W., and WORTHINGTON, J. E. "Supervised study in Wisconsin high schools," *School Review*, 32:603-12, October, 1924.

TABLE I. ATTITUDE OF TEACHERS TOWARD SUPERVISED STUDY

Question and Author	Number of Teachers	Percent of Total Number Questioned			
		Better Results	No Apparent Difference	Poorer Results	No Answer or Vague Answer
Pupil preparation of lesson. Cole.....	60	70	20	5	5
Opportunity to aid pupils. Cole.....	60	75	1	15	9
Opportunity to attain ideal in teaching. Willett.....	29	79	10	4	7
Brown and Worthington.....	8	100	0	0	0
Quality of work of pupils. Cole.....	60	60	33	5	2
Amount of work covered. Cole.....	60	33	60	7	0
Willett.....	29	24	58	3	15

new procedure; 30 percent could note no difference; and 21 percent said they had to study more. Here again, all is not to the credit of supervised study.

Brown and Worthington asked the pupils of one algebra and of one English class, who had been in the experimental sections in their investigation, their attitude toward supervised study. It is interesting to note that while the algebra pupils were unanimously in favor of supervised study, eighteen of the twenty-six pupils in English preferred the recitation procedure. Although the numbers involved are small, there seems to be evidence that other factors than the technical organization of supervised study play the predominant part in determining its success in any specific situation.

Attitude of teachers toward supervised study. Cole, Willett, and Brown and Worthington have given us information regarding the views teachers take of supervised study. These data are presented in Table I. In the left column there are given the questions asked, the investigator's name, and the number of teachers questioned. In this form, the facts are readily obtained and need little explanation.

Perhaps the most surprising fact in the table, in view of the sweeping claims made for supervised study, is the lack of agreement in teachers' opinions. The greatest support is given the claim that through supervised study teachers can better realize the standard or ideal they have set themselves, and yet but 80 percent in an actual trial find such to be the case, (the Brown-Worthington study contains but eight expressions of opinion—too few to be given much weight).

Considerable doubt is thrown upon the claim that more ground can be covered under supervised study if we are prepared to accept the above figures. Less than one-fourth of Willett's teachers were able to accomplish more, and the gain for these is offset by loss with other teachers. Cole's figures, however, lend some support to the claim. In general, the data seem to reflect a sentiment which was stated some pages earlier—that supervised study, like all other phases of teaching, is a matter, not of a system nor of a formal scheme, but of the individual teacher.

Attitude of principals toward supervised study. Facts regarding the attitude of principals toward supervised study are given us by Proctor and by Brown and Worthington. The thirty-one principals who returned statements to Proctor were practically unanimously in favor of the particular supervised-study technique which they employed. There was the same agreement that standards of scholarship had been raised and eliminations through failure had been lowered. Some quantitative support is given these facts, evidently as the result of some study by the principals themselves. (These criteria of success will be considered later, in another section of the report.) Eighty-four percent of the principals replying stated that the pupils' study habits seemed to have improved under supervised study; 72 percent thought the pupils were studying less at home and completing their work in school; 80 percent thought that both the teachers and the pupils preferred the supervised-study procedure to the older type of organization.

The chief objection that can be raised to this study of Proctor's is the fact that the principals were asked questions about which, without elaborate testing and investigation, they must have really known very little. For example, the average high-school principal would have little opportunity to gather the information concerning the state of his pupils' study habits, even granted that there were an easy, objective method for doing so.

In the Brown-Worthington report, all of the five principals thought the type of supervised study could be extended easily throughout the system without requiring any great expansion of the teaching force. Four of the five were heartily in favor of the technique used in the experiment, while one disapproved of it.

Claims for supervised study given little support by data. If we accept at their face value the data which we have examined in these studies of the consensus of opinion regarding supervised study, we must admit that they give very little support to the claims which writers advance for this procedure. The one possible exception to this statement is the claim of popularity of supervised study with pupils and teachers. Even on this point the opinions expressed are far from being unanimously in favor of supervised study.

But we are under no obligation to accept the data as valid. The questionnaire method of collecting data has itself been under very heavy fire in recent years. Among the objections which are frequently raised against the method we may mention three which hold in full force in this connection; there is little assurance of a valid basis of judgment for the opinion expressed; opinions are not constant and thus, reliable, but rather vary greatly with the same individual at different times; differences of interpretation of questions play an important part in determining the answers given.

In addition to these general objections to the data, there are other difficulties which are peculiar to the present instance. Altogether too frequently the trial of supervised study was too short to admit of final conclusions regarding the comparative merits of the new and the old procedures. Again, in some of the studies the number of individuals questioned was too small to provide facts of wide significance. Still again, the individuals consulted were not always those best qualified to furnish an opinion.

B. MERITS CLAIMED ON THE BASIS OF EXPERIMENTATION

In our discussion of the merits claimed for supervised study we are following the usual practice of distinguishing between statements which are based entirely upon personal judgment and those which are supported by objective data. We have concluded our survey of the first kind of material—individual opinions and reports of consensus of opinion—and come now to a consideration of the claims which are built upon some sort of measured results. We deal, first, with purely statistical studies, and second, with controlled experimentation.

1. Crude experimentation—purely statistical studies.

We shall consider ten reports of a statistical nature bearing upon the results of supervised study. With two exceptions they are all concerned with matters of promotion, failure, elimination, and the like. Five of the ten articles are mentioned and criticized by Breed.¹⁰ In each case the comment will be very brief.

Claims of statistical studies. Increase in the percent promoted under supervised study is mentioned by Wiener, who employed the double-period technique at Newark, New Jersey, by Proctor,¹¹ on the basis of data which he collected from thirty-one high-school principals on the Pacific Coast, and by Martin¹² from his study of 6,000 school marks made after five years of the sixty-minute divided-period type of technique in the Norristown, Pennsylvania schools.

Decrease in failures and eliminations from school through supervised study is claimed by Brown,¹³ who employed the double-period technique at Joliet, Illinois; by Hall-Quest, at Cairo, Illinois; by Cole,¹⁴ at Seattle, Washington, where he used the supervised-home study plan, by Allen,¹⁵ who at Springfield employed the laboratory-recitation plan; by Proctor; and by Martin.

Loveland¹⁶ reports the results of six years' experience with the "extra-period" technique. The last three of the six years actually showed an increase in the number of failures over the first three years, but this loss was partly compensated for by a decrease in the number of eliminations.

Martin's study of school marks with supervised study and with unsupervised study is the most extensive in the literature. He states that with supervised study (1) the failures constituted 49.5 percent the number previously customary, (2) the number of minimum

¹⁰BREED, F. S. "Measured results of supervised study," *School Review*, 27:186-204, 262-84; March, April, 1919.

¹¹PROCTOR, W. M. "Supervised study on the Pacific Coast," *School and Society*, 6:326-28, September 15, 1917.

¹²MARTIN, A. S. "The long school day and directed study," *Education*, 39:158-64, November, 1918.

¹³BROWN, J. STANLEY. "Supervised study in high school," *School and Home Education*, 24:735-45, December, 1916.

¹⁴COLE, THOMAS R. "One year of supervised study," *School Review*, 25:331-35, May, 1917.

¹⁵ALLEN, I. M. "An experiment in supervised study," *School Review*, 25:398-411, June, 1917.

¹⁶LOVELAND, L. I. "Supervised study," *School Review*, 23:489-90, September, 1915.

passing grades was reduced, and (3) the number of grades of A and B was increased.

Erickson¹⁷ accepted the evidence resulting from the use of the eighty-minute divided period at Houghton, Michigan, as indicating that supervised study reduces the amount of home study. Proctor¹⁸ compared the amount of time spent in study by 479 high-school pupils in systems which had adopted the supervised-study procedure with the amount spent by 1184 high-school pupils in systems which still employed the old form of organization. Estimates of time were furnished by the pupils themselves. The results showed that the supervised-study pupils spent less time in home study than the unsupervised, but that the *gross* amount of time spent in study by the two types of pupils was about the same. The unsupervised pupil then regularly studies less time in school and more time at home.

Limitations of statistical studies. We may criticize these ten reports as a group. All the writers base their claims upon the comparison of gross results with supervised study and previous results without supervised study. The improvement noted is accredited to supervised study as such.

Before the claims can be accepted as valid, we need to note possible sources of error. In the first place, the statistical method of attacking such problems as those of the merits of supervised study is not completely satisfactory. The statistical method merely takes the data as it finds them, without controlling in any way the factors responsible for the data, and manipulates the data toward certain ends with no provision or allowance for the effect of the uncontrolled factors. In the second place, we have in these particular cases, as Breed¹⁹ points out, the "indirect and probably invalid assumption that there is a very clear, if not exact, correspondence between rate of promotion and rate of improvement."

The implications of these general and special sources of error are at once apparent when we raise the question: How does any one of the writers cited know that supervised study as such increased the percent of promotion; may there not have been other factors, unobserved, which contributed much to this improvement? For instance,

¹⁷ERICKSON, J. E. "The results of supervised study in the Houghton, Michigan High School," *School Review*, 24:752-58, December, 1916.

¹⁸PROCTOR, W. M. "Home and school study time of 1661 Pacific Coast high-school pupils," *School and Society*, 6:596-600, November 17, 1917.

¹⁹BREED, FREDERICK S. "Measured results of supervised study," *School Review*, 27:189, March, 1919.

perhaps there was a general lowering of standards of quality, or a reduction in the requirements regarding quantity, or an increase in the total amount of time spent by the pupils in study. None of these factors could be directly attributed to supervised study, but some of them or all of them may have exerted large influence. By neglecting such factors the statistical method fails to meet the needs of the situation.

If, however, we were disposed to overlook the difficulties in the way of proof by the statistical method and to accept as valid the claims for supervised study, we would still lack an explanation for the success of supervised study, and would have with us the questions: *Why* did supervised study succeed in any particular instance? Did the advantages arise in connection with the whole scheme of supervised study, or in connection with some phase or part of it? If the latter, would it be possible to isolate this part from the whole and to concentrate upon it without involving the rest of the machinery of supervised study? Here again we find the statistical approach hardly suited to the task.

2. Controlled experimentation.

As compared with the purely statistical type of investigation which we have just discussed, the definitely experimental should produce more significant results. The very essence of the latter method is the control of the factors which the statistical method must largely disregard. By the same token the controlled experimental method is the more exacting and difficult. We are not entirely unprepared, therefore, to discover but five articles which report the results of an experimental approach to the problem of the value of supervised study.

Breslich—Study in mathematics. In 1912, Breslich,²⁰ in a mathematics course in the University high school of the University of Chicago, first applied the controlled experimental technique to supervised study. The pupils in the course were divided into two groups of nearly equal ability on the basis of their grades in mathematics the preceding semester. The unsupervised group recited as usual in a period of forty-five minutes and prepared their advance assignments later in the day either at school or at home. The supervised group met for recitation one period and remained with the instructor

²⁰BRESLICH, E. R. "Teaching high-school pupils how to study," *School Review*, 20:505-15, October, 1912.

for the next, in which all preparation for the following day was completed under his direction. The material covered and the type of instruction in the recitation period was the same for both sections.

After fourteen weeks devoted to a study of linear equations, an end-test was given. (a) The average grade for the supervised group was slightly higher than for the unsupervised. While the latter secured a greater number of A's and B's, they also received a greater number of lower grades. The final advantage for the supervised group is the more significant since, on the basis of the previous semester grades, the unsupervised group held a slight initial advantage. (b) The poorer pupils seemed to profit most while the brighter may even have suffered some loss. (c) The supervised group put in less time in study in toto than did the unsupervised, though the former were required to spend a full additional school period on their preparation.

When the fourteen weeks' experimentation had been completed, Breslich reversed the procedure by taking up a unit of six lessons on operations with fractions, in which the supervised group became the unsupervised and vice versa. The results of an examination at the end of the period showed that the group which had had the advantage of special training for the longer time maintained their superiority. Apparently their improved methods of study continued to function.

Minnich—Study in geometry. The second of the experimental studies, also in the field of mathematics, was made by Minnich²¹ at Bloomington, Indiana. A class of thirty-six pupils in plane geometry was divided into two groups, as in Breslich's experiment, on the basis of previous grades. The supervised group met for forty minutes of recitation and spent the next forty minutes in directed study on the advance assignment. Extra tasks were given the brighter pupils. The unsupervised group met for a period of recitation and made preparation outside without guidance.

During the fifteen weeks of the experiment a number of tests were given and close records were kept of the daily recitations. In both respects the supervised group surpassed the unsupervised. The supervised group had higher average grades for ten of the fifteen weeks and the same average grade for three of the other five weeks:

²¹MINNICH, J. H. "An experiment in the supervised study of mathematics." *School Review*, 21:670-75, December, 1913.

in only two of the fifteen weeks were they excelled. At the end of the experimental period, the advantage lay with the supervised section both in the average grade given and in the number of the problems correctly solved in the final examination. A further fact of importance is that the supervised group contained no one who failed in the subject whereas the unsupervised group lost two in this way.

Breed—Cooperative experiment in English, Latin, and Algebra.

Both of the preceding experiments were on rather a narrow scale. Breed's article²² reports the results of cooperative experimentation in fourteen high schools, thirteen in Michigan and one in Minnesota. The general details of procedure were worked out by a committee, who with Breed at the head, supervised the experimentation.

In each school a group of ninth-grade pupils in a given subject was divided into two sections on the basis of previous marks and preliminary tests. The same teacher instructed both sections, using fifty-minute periods. In one section, this time was apportioned thirty minutes to recitation and twenty minutes to directed study. In the other no special instruction was given in study, and the full fifty minutes of the period were devoted to recitation. This procedure was continued for six weeks and then the sections were reversed. Care was taken to make clear to the teachers the nature of their task in furnishing pupil-direction in study.

It is useless here to go into detail in the matter of the results obtained in the fourteen different schools. We may quote Breed regarding the general results: "On the basis of average results for whole classes, supervised study of the type tested was slightly less efficient in first-year algebra, was much less efficient in ninth-grade English, and was much more efficient in first-year Latin" (page 284). There seemed to be corroboration for Breslich's finding that the poorer pupils fare better with supervised study, while the better gain little if anything. Breed also makes a number of recommendations: first, that a "differential" plan for supervised study be employed, with segregation of the poorer pupils; second, that a special technique be devised for teachers in the directing of study; third, that instruction for the poorer pupils be "improved," and for the brighter pupils "developed" (an important distinction); and fourth, that school

²²BREED, FREDERICK S. "Measured results of supervised study," *School Review*, 27:186-204, 262-84; March, April, 1919.

people exercise "caution against a general assumption of the effectiveness of the divided and double-period plans of supervised study" until further experimentation shall have proven their worth (page 278).

This experimental work is interesting for the reason that it attempted a wholesale attack upon the values of supervised study. As stated, fourteen schools took part, and studies were made in three school subjects. It is interesting also because of its failure to find clear and convincing proof for many of the claims customarily made for supervised study. While the results cannot be called negative, certainly as a whole they are not strongly positive.

Heckert—Study in English composition. Breed's report of experimentation in ninth-grade English as above described influenced Heckert,²³ at Miami, Ohio, in 1922, to try out the divided-period technique in connection with English composition. The same length of period and the same distribution of time within the period was maintained as in the Breed experiment.

Heckert tried to improve Breed's procedure at three points; first, he gave more care to training his teachers in the direction of study; second, he used additional criteria for selecting his groups; and, third, he employed a standardized scale for evaluating all composition work.

Breed had used previous English marks and preliminary composition tests graded in the usual way to select his groups. Heckert divided his thirty-four pupils on the basis of their scores in the National Intelligence Examination and in two composition tests graded by means of the Thorndike-Hillegas Scale.

For twenty-five one-hour periods (five weeks) the same teacher taught both sections, giving two tests during the course of the experiment, and also end-tests. The procedure was not reversed at any stage. The results showed (a) a real gain for the supervised group, both absolute and relative, over the unsupervised; and (b) a continuous gain for the brighter as well as for the poorer pupils, though the gain was less pronounced in the case of the former.

This second result differs, of course, from the results obtained by Breed and Breslich (the latter in mathematics). Heckert explains the difference in results naturally on his variation from their experimental technique, especially on the point of preparing the teacher for

²³HECKERT, J. W. "The effects of supervised study in English composition," *Journal of Educational Psychology*, 5:368-80, May, 1922.

her work of study-direction. If he has proven that it is unnecessary for the brighter pupils to suffer from the use of supervised study, his experiment is an important contribution. At any rate, he has done well to call attention to the need of giving the teacher a clear understanding of her work in connection with the guidance of study.

Beauchamp—Study in physical science. The most carefully conducted experimentation reported is that by Beauchamp²⁴ in teaching physical science in the University high school of the University of Chicago. The experiment was begun in October, 1921, and was completed in April, 1922.

Beauchamp exercised extraordinary care in the selection of his experimental and control sections. Five factors were taken into consideration: (1) size of class (the same throughout for the two groups), (2) age, (3) native intelligence, (4) rate of silent reading and (5) ability to interpret the material read. The control group was a very little older and very slightly less intelligent, but they read more rapidly and understood better what they read. All statements have reference to the average for the groups.

In the course of the experimentation, the following factors were kept constant: time spent in study, amount of material covered, the tests, the scoring of the tests, and the oral presentation of the teacher. The only variable permitted was the specific problem attacked. The sections knew that an experiment was being conducted, and because of the natural rivalry which resulted, were careful to prevent any "leaking" of information about the tests or class procedure.

Both sections were taught by Beauchamp himself, following the pattern of instruction outlined by H. C. Morrison,²⁵ and known as the "mastery technique." At the end of each "assimilation period," three tests were given—written reports of the unit, completion tests, and thought questions. These three tests, it was thought, measured different phases of the material acquired and were therefore supplementary in securing an adequate measurement of the whole. The scoring was carefully worked out and impartially applied. The same tests were given to both the experimental and the control groups. In

²⁴BEAUCHAMP, WILBUR L. "A preliminary study of technique in the mastery of subject-matter in elementary physical science." Supplementary Educational Monograph, No. 24. Studies in Secondary Education, I. Chicago: University of Chicago Press, 1923, p. 47-87.

²⁵MORRISON, H. C. "Studies in high-school procedure—half-learning." *School Review*, 29:106-18, February, 1921. Also, "Supervised Study," *School Review*, 31:588-603, October, 1923.

the article, the significance of the results is shown, not simply by the presentation of the gross facts, but by an analysis of the experiment itself and of the teaching.

The experimentation consisted of six parts, the first five based on "units" of work extending over three to five weeks. In the first unit, identical instructions were given both groups in methods of study in order to furnish a basis for comparison for later and different types of study-instruction. At the end of the period, which lasted four weeks, tests were given; the two sections had virtually identical scores, again demonstrating the fact of equal ability, or at least of equal use of ability to assimilate.

Throughout the rest of the experimental period the control group continued to employ the methods of study suggested to them in the first unit. Specific instructions on study, however, were given the experimental group in connection with each of the four problems attacked. These were: the effect of instruction to develop the habit of studying a paragraph to determine its central idea and then to organize the rest of the material about this idea; the value of instruction to develop the habit of finding and answering questions in the material assigned; the possibility of developing in pupils the habit of reading through a whole assignment before beginning careful analytical study of the parts; and the value of direct coaching on the method of solving thought questions, together with practice in such solution. In each of these four sub-experiments the supervised group surpassed the unsupervised, though not always by as large a margin as might have been expected. Beauchamp himself points out also that some of the gain accredited to specific instruction in connection with some of the problems may actually belong to earlier instruction.

The last measurement taken was the relative gain made by the two sections in reading ability during the period of experimentation. The results seemed to show that the supervised group, because of their special attention to analytical study, failed to increase the rate of their reading as much as the control group, though their improvement in comprehension was much greater.

Beauchamp's work is to be especially commended on a number of points—his great care in selecting his sections, his control of instruction so as to make it as nearly identical for the two sections as possible, the use of a number of tests instead of a single test to

measure the results of instruction, the narrowness of the problems attacked, and the analysis of the results obtained.

It is important to note that there was no vast improvement shown by the experimental group over the control group, as the claims for supervised study seem to imply. On the other hand, the advantage for the directed group, while small, was consistent.

Brown and Worthington—Cooperative experiment in Algebra, English, and History. The last of the experimental reports here discussed as also the most recent is Brown and Worthington's²⁶ cooperative study with five Wisconsin high schools, which in many ways resembles Breed's study with the Michigan schools. In as much as one of the five high schools undertook three experiments, the report covers a total of seven.

The usual experimental procedure was followed; in having paired sections of equal ability pursue the same subject-matter under the same teacher for a given period of time, at the conclusion of which tests were given. The sixty-minute supervised-study period was used in the experimental groups, divided roughly into a twenty-minute discussion and recitation period, a fifteen-minute assignment, and a twenty-five minute work period. The members of the control group met with the teachers only forty-five minutes in recitation—a disparity of fifteen minutes as compared with the experimental group.

Experiments were conducted in algebra, English, and history. The results are given in the article in a few tables of data in terms of group scores, medians, and so forth. The major conclusions from the study, as found on page 612, are: first, two pairs of classes, in algebra and English, showed "rather definitely that greater progress was made" with supervised study; four pairs showed "slight variations, favorable to supervised study;" one pair, in United States history, showed superiority for the unsupervised group. Second, in three of the pairs fewer failures were made in the supervised sections; in two, the number was indeterminate from the data supplied from the schools; and in the seventh pair, more failures were found in the supervised section. Third, "objective data indicated a superiority of the supervised plan over the recitation plan as a method of instruction." Fourth, "the investigation showed also that when objective data are sought, the present instruments of measurement are not

²⁶BROWN, W. W., and WORTHINGTON, J. E. "Supervised study in Wisconsin high schools." *School Review*, 32:603-12, October, 1924.

wholly adequate." Fifth, all agencies involved—principals, teachers, and pupils—were generally favorable to the newer procedure.

We may spend some time on a criticism of this study since it illustrates so well the dangers and the difficulties connected with an experimental investigation of this sort.

The third and fourth conclusions as stated above are clearly inconsistent, unless we are to assume that the third is based upon other data than those secured by means of the measuring instruments whose objectivity is decried in the fourth conclusion. In any case, it is a fair question to ask what *objective* data one might gather to prove the superiority of the supervised-study procedure.

The first conclusion states that two pairs of classes, one of which was English, showed "rather definitely" greater progress with supervised study. We have in the article data with which we may test the validity of the claim. On pages 606-07 we find the following statement, "From the foregoing evidence it appears that the supervised study method was slightly superior in English." The word here is "slightly" rather than "rather definitely." The sentence is based on a table which shows that in a composition test scored by the Hillegas Scale, the recitation group produced a median paper which was scored 6.4 whereas the median paper for the supervised group was 6.7, a difference in favor of the latter of .3. At the same time, we note that the median individual in the supervised section has an I.Q. of 96.3 as compared with the median I.Q. of 94.5 for the control group. If we grant that intelligence as indicated by the I.Q. may be exactly measured and that it bears a close relation to quality of school work (clearly the assumptions in the use of the tests in this investigation), then we may ask how much of the above advantage in composition work with the supervised section was due to their superiority in intelligence?

There are, too, other questions to be raised regarding the validity of the same conclusion. Since the supervised group were with the teacher fifteen minutes longer per day, are we not to expect a proportionately better return from the former before we have proof that the supervised study procedure is even as effective per unit of time as the recitation method? Again, do not the writers themselves admit that the .3 advantage for the supervised-study group means nothing when they mention the inadequacy of the measuring instrument? And again, is it not possible that numerous factors were at work, which the experimenters were unable to control and have made no

effort to evaluate, such as teachers' interest, amount and quality of the pupils' outside work and the like?

The following illustration serves to show the care which must be taken in interpreting gross experimental data. Superiority for the supervised-study procedure is claimed on the basis of this table:

TABLE II.—SCORES FOR THE TWO SECTIONS WITH BRIGGS' ENGLISH FORM TEST

Test	Median score Recitation group	Median score Supervised group
Punctuation.....	82.84	84.90
Verb "lie".....	96.40	98.64
Verb agreement.....	91.46	81.59
Pronoun agreement.....	95.83	99.55
Possessives.....	85.41	95.95

In the first place, we are dealing with group scores, which may actually conceal the real significance of the experimentation. In the second place, putting aside the question of the validity of the data as measuring the traits of abilities trained, we note that the differences in the median scores for the two groups, with the exception of the third and fifth items, are insignificant, and that the advantage in the one case lies with the supervised group and in the other, with the recitation group.

General criticism of the experimentation reported. By way of concluding our discussion of the experimental attack upon the problems immediately connected with supervised study, we may point out a number of general criticisms, adverse and favorable, which apply in varying degrees to the studies considered.

Adverse criticisms regarding experimental work. 1. In general, the scope of the problem undertaken has been too broad. That is, the experimenter has usually tried to prove too much at one time—that the supervised-study procedure as a general proposition produces superior results to the older recitation type of organization. From the very nature of the experimentation it has followed that the conclusions are open to question.

2. There usually has been insufficient control of variables. In a way, this criticism follows directly from the first; nicety of control has been made impossible by the grossness of the problem attacked.

On the other hand, where the problem has been restricted, variables have been unnoticed, or if noted, uncontrolled. For example, we may mention the varying amounts of time spent by experimental and control groups on their work, the practice of making special assignments with supervised study in order to keep the brighter pupils busy and interested, and the difference in the teacher's attitude in dealing with experimental and control groups. Such factors must certainly have affected the scores of the pupils in the final measurement of results.

3. The data supplied in the reports are treated usually only in gross; that is, the comparison of supervised with unsupervised study is usually in terms of averages, tertiles, and so forth. The fortunes of the individual receive slight attention. Little effort is expended to discover who are especially helped, and who, if any, hindered by the change in school practice.

4. The results are usually presented without analysis to determine the *Why* as well as the *What*. More specifically, the element, pupil-direction is seldom isolated from the whole situation, and its importance as conditioning the success or failure of supervised study is seldom recognized. There seems to be a general assumption that whatever the results, they may be traced directly to the technique employed.

5. In some cases the conclusions which have been reached as the result of some particular piece of experimentation have been generalized to hold with equal validity for all schemes of supervised study regardless of varying factors in different situations. In fairness to the experimenters it should be noted that this criticism should be lodged more especially against the general writers on the subject of supervised study.

6. There is a tendency to exaggerate the importance of relatively small differences in comparing experimental and control groups, especially when the difference is in favor of the experimental group. On the percent scale a difference of five as determined by tests is insignificant, even when the difference refers to averages or medians.

7. The experimentation on supervised study has attacked only one side, or one phase of the results of supervised study, namely, its merits in securing more effective acquisition of information. The assumption that supervised study possesses other advantages is clearly shown in the long list of claims we were able to cite from the literature. Breslich and Beauchamp have both shown a recogni-

tion of this fact in their comments on the effect of the training given the experimental group in later learning situations.

Positive value of experimental work. 1. In spite of the small advantages customarily found in favor of the supervised-study procedure, and in spite even of inconsistencies and exaggerations in the conclusions drawn, we cannot read the experimental literature without being convinced that we have valid and adequate grounds for believing in the comparative superiority of the supervised-study procedure over the older types of organization. Experimentation has given us justification for this belief as no other agency could have done. If we add together all of the separate experiments enumerated in the six reports (regarding Beauchamp's work as a single experiment) we have a total of twenty-six experiments, the big majority of which tend to establish the value of supervised study on at least one point—the pupils whose efforts in study are directed acquire more information than the pupils who receive no special instruction in study.

2. Experimentation has also indirectly and implicitly indicated the importance of the element which we have styled pupil-direction. The twenty-six experiments which we have canvassed disagree radically on the type of technique used in each; their only point of agreement is the fact, that pupil-direction was undertaken. We find, it is true, very few direct references to this element, but it is not an improbable hypothesis that the degree of success or failure of the various experiments to demonstrate the value of the supervised-study procedure was proportionate to the amount of attention paid this element. It will be recalled that Heckert took this assumption as the basis of an experiment which seemed to support the hypothesis.

3. We have said that experimentation has attacked but one angle of the situation when it has shown that supervised study makes possible the more effective acquisition of information. On the other hand, in defense of the experimentation, one may doubt whether all of the claims for the new procedure are susceptible of objective proof—unless one is prepared to accept the doctrine that everything that exists is measurable. At any rate, a beginning has been made in certain of the experiments which show that improved habits of study tend to persist.

4. The earlier type of experimentation has probably accomplished all that it can for us, in pointing out in a general way the value of supervised study. What is needed is more work of the type

represented by Beauchamp's investigation. Narrow problems, capable of adequate control in experimentation, with the emphasis upon the analysis of the results in terms of the type of learning called for and in terms of individual pupils, should receive the major share of experimental attention. From such studies there should develop a clearer understanding of the gains to be expected as well as a more satisfactory methodology of instruction.

CHAPTER IV

CONCLUDING STATEMENT

In this critical summary of certain periodical literature on supervised study in secondary schools, we have noted a serious confusion in educational writings and hence in educational thinking in connection with the meaning of the term "supervised study." We have seen the extreme variability in the types of technique which are employed for the administration of pupil-direction in study. We have pointed out the common practice of making general unproven claims in regard to the merits of the supervised-study procedure. We have also canvassed this literature, giving special attention to articles of an experimental nature, with reference to the validity of the evidence relating to the merits of supervised study.

In concluding this discussion, we shall make a number of observations of a rather general sort regarding both the literature on supervised study and the attitude taken by writers toward this new procedure.

In the first place, we must admit that an unfortunately large amount of writing on supervised study is repetitious and, to put it mildly, futile. The general impression resulting from the reading of several hundred pages of periodical matter on the subject is that the same things might have been said to greater effect in a fraction of the space actually used.

In the second place, we are struck by the failure of some writers to confine their discussions to supervised study without involving unrelated issues. We need mention here as examples only a few of the newer phases of methodology and administrative procedure which are found continually and variously associated with supervised study—classification of pupils in homogeneous groups, teaching by projects, individual instruction, educational and vocational guidance. Some writers even add to the general confusion by making supervised study equivalent in meaning to some of these educational practices.

In the third place, many of the investigations of supervised study appear to represent much wasted effort since ~~it is unnecessary~~ to prove the obvious. We may assume that any intelligent effort to apply generally accepted principles of teaching will be more efficient

than instruction which neglects or violates such principles. It will be noted that we are referring here rather to pupil-guidance than to technique, and this fact leads us to the next general observation.

In the fourth place, relatively too much attention in educational writing and thinking has been paid to the technique of supervised study, and too little attention to pupil-direction in study. On page 11 we stated our purpose of devoting the major share of our comment to the technique of supervised study. There were two reasons for this decision: the periodical literature on pupil-direction is limited in quantity and in quality; and this literature does not lend itself readily to systematic treatment. Hence, we have made but incidental reference to pupil-direction, and yet even such reference must have suggested the thought that pupil-direction is the very heart and center of supervised-study.

There may or may not be some technique which is superior to all others whatever the circumstances. This is improbable. There may be, and probably is, some technique which is superior to all others for a given situation. And yet, granted that this technique could be discovered and instituted, we have little assurance that it would produce the most desirable results. When we concentrate upon technique, we are dealing with but the externals, the *form*, and neglecting the *content*. Sound pupil-direction in a poor technique is better than a good technique with faulty pupil-direction. It may honestly be questioned whether any sincere and intelligent (note the adjectives) endeavor to give pupil-direction ever failed of its purpose, regardless of the technique of which it was a part.

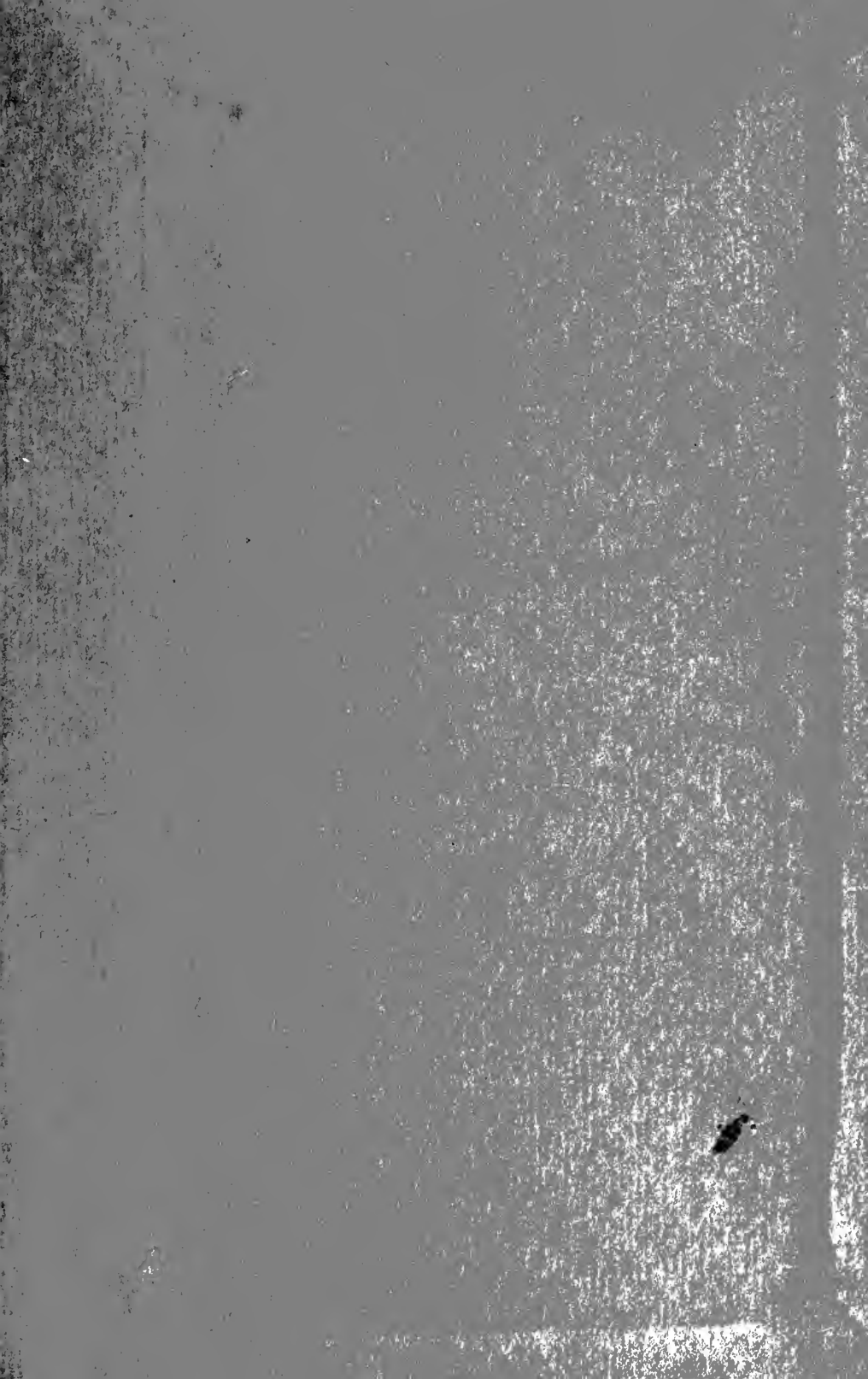
Our plea, then, is for a change in emphasis in thinking and in practice. We need to be less anxious about the type of technique which the administrator chooses for his school, and more concerned with the quality of pupil-direction which the teacher gives in the period of study.

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