DIRECTED OBSERVATION AND SUPERVISED TEACHING

By:
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PREFACE

As a supervisor of teacher-training at Purdue University, the writer has for some time felt the need of a textbook which could be put into the hands of student teachers to serve as a guide in observing, in supplementary reading, in making lesson plans, and in reporting to the supervisor. With such an aid it would be easier to keep the class together and their attention simultaneously centered upon a given problem. Students should be instructed in the ethics of observation; they should be made to appreciate the conditions under which observation and student teaching are done; they should be given daily instruction bearing upon the phase of classroom activity upon which they are to center attention; they should be instructed how to proceed in making lesson plans; they should be directed to outside reading. This routine phase of the supervisor's activity consumes, in many instances, all his time, leaving none for the real business of making significant observations or of directing progress in obtaining skill in teaching. It therefore seemed desirable to prepare in book form such an arrangement of materials as would enable supervisors to direct the major part of their energy into professional rather than into clerical channels.

It will be seen from an examination of the text that the writer has attempted to make a complete analysis of the student's activity while observing and practicing, and then to arrange each unit of work so that it takes its proper psychological position with respect to the entire program. The student begins by directing his attention to the material side of the classroom, later he observes the physical and mental characteristics of the teacher and pupils, and still later he observes the technique of instruc-

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tion. This is followed by a theoretical discussion of the making and utilizing of lesson plans, a few model plans of varying types, and a discussion calculated to prepare the student to teach his first lesson. The remainder of the book deals with such problems as arise in actual teaching situations; for example, teaching pupils to think, conducting drill lessons, conducting development lessons, effective questioning. Because the needs of the pupils must at all times be kept uppermost in mind, it was not possible to arrange the teaching projects in any rigid sequential order. For example, the needs of the pupils alone should determine whether the drill or the development lesson is to be considered first.

The observation lessons aim to direct the student's attention in a systematic manner to classroom conditions and activities. Along with each observation is included a theoretical discussion of that which is to be observed, thus making the process more intelligible and effective. Provision is made for a daily report on the observing by including after each lesson a guide to observation and a model report upon it. It therefore becomes an easy matter to know just what any student is doing at any given time and to check his progress day by day. At some time during the student's teaching activity he should be required to submit a written report upon his attempt to accomplish the aim of each lesson of Part IV. These reports, when filed with the submitted lesson plans and reports of observations, make a complete record of the student's activity.

In the preparation of the book the writer has kept in mind also the possibility of its use in training teachers in service.

The following publishing companies and individuals have given permission to quote: The Macmillan Company, Houghton Mifflin Company, The Bobbs-Merrill Company, Charles Scribner's Sons, Public School Publishing Company, Ginn and Company, Professor Guy M. Whipple, and A. Ashmun Kelly. The author acknowledges indebtedness to the Kewaunee Manufac-

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I hope that readers and users of this text will write to the author freely regarding its defects and merits, so that it may be improved if new editions should be required.

J. H. B.

West Lafayette, Indiana

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DIRECTED OBSERVATION AND SUPERVISED TEACHING

PART I

INTRODUCTION

In Part I we attend to the setting in which educational procedure is to take place; that is, buildings, classrooms, instructional equipment, teacher's personality, library, study halls, etc. These are very important considerations, for the extent to which they are adjusted and properly coördinated measures the extent to which the real business of the school is possible. They determine also the type of schoolroom outcome that may be expected. The school of yesterday, for example, contained only recitation rooms and study halls. Such buildings would be totally inadequate to our present conception of legitimate school activity. Well-equipped laboratories, playgrounds, and auditoriums are now considered necessary. The whole school setting then was more suited to the getting and reciting of lessons than to the directing of pupil activities toward the development of initiative and power. Such a setting contrasts strongly with that of the present, in which even the decorations on the wall have their rôle to play in fitting the setting to the task.

It is our purpose in the first sixteen lessons to observe carefully these tools and the skill with which the teacher adjusts them to the task in hand. The student should bear in mind that the tools have their excuse for being only as a means to an end; they never can be justified in themselves. Their only

excuse for being is that they serve the purpose of education. Hence it is only through outcomes that they have any meaning and can be justified. It is the work of the expert to keep each tool nicely adjusted to the task of education; to see that attention is not directed upon it as an end in itself but rather as a means to an end; to see that on the whole the tools do not function at cross-purposes, that is, to see that they are so subordinated that all contribute as a unit to maximum efficiency; and finally to see that they operate in the attaining of desirable outcomes.

During this series of observations the student should make an effort to follow the text rather closely, making only such deviations from it as the director of observation may prescribe. Each observation must be preceded by a careful reading of the text if the student is to get the most out of it. He will then be intelligent about the things which he sees. One cannot effectively observe lighting, for example, without some definite notions as to the requirements for good lighting. It would be just as effective for an uninformed individual to observe in the operating-room of a hospital in order to determine the suitability of its equipment as for a student whose only idea of a schoolroom and its needs has been obtained as a pupil to observe without previously informing himself as to what is needed. He will, of course, observe things which the outline of the day does not call for. Such observations should be ignored at the time, and the attention should be centered upon the task at hand. There is a great advantage in this, as the student is thereby focalizing his efforts upon a few things which he is prepared to observe.

Lesson XIV, in which we study the instructional equipment, will require that the student select for study those topics with a bearing upon the subject under observation. The student, for example, who is observing in a physics laboratory will pay no attention to discussions that have a bearing upon other types of laboratory work.

LESSON I

Aim. *To become acquainted with the educational organization behind observation and student teaching and to become familiar with good procedure in the matter of observation.*

Student teaching done under various types of organization. In general there are three types of organization under which student teaching is carried on. (1) Many normal schools and universities set up model schools of their own, which serve as laboratories for practice teaching and observation. Many of these schools charge tuition and attract a rather highly selected student body. In certain schools of this class, such as the University of Chicago Elementary School and the High School, there is a long waiting list; hence the selection, which would be considerable if nothing but the ability to pay the tuition were taken into account, is undoubtedly added to by the influence exerted by parents, who are often members of the university faculty. The visitor is struck immediately by the fact that these are not average children but highly selected children. (2) Other institutions enter into contract with the city board of education to utilize certain of the neighboring public schools as practice schools. (3) A third and less desirable type of organization is one in which there is no understanding between the institution and the board of education. In such situations the supervisor must depend upon the good will of the superintendent, principals, and teachers, who constantly jeopardize their positions in the cause of education.

The advantage of the model school is evident. The supervisor is free to work out the methods of procedure that are deemed most effective. He is not subject to the worry that comes from

complaints of parents who continually threaten to disrupt the system. On the other hand the pupils, as was said above, are a selected group. The student teacher does not become acquainted with a school of the sort in which he must teach during the coming year. The problem of discipline is less acute than in most schools, as the pupils come from the best homes. Similarly the problem of presenting the material effectively is much lessened. The contract arrangement, on the other hand, gives the student teacher a very realistic situation in which to work. Success there is much more likely to mean success in a public-school situation. True, the student teacher is somewhat sheltered in either case by the fact that the supervisor is ultimately responsible for what goes on. But the one trained in the public school has an opportunity at least to become more familiar with the problems presented in such schools. The dull children are more in evidence; the problems of discipline are more frequent; the equipment is more likely to be that which the student teacher will have when he enters the service; and teachers must work in closer conjunction with the community.

The third type of situation, under which many student teachers at present must work, is almost an impossible one. However, when teaching under those conditions the student teacher must bear in mind the favor granted by the classroom teacher and principal and do his best to conduct his work so that serious consequences can never fall upon those who jeopardize their positions by giving him an opportunity to observe and teach. The writer believes that if the candidate for student teaching understands the conditions under which he is about to work, there will be less likelihood of failure to meet the situation.

The following contract between Ohio University and the Board of Education of the city of Athens represents a very desirable situation for observation and practice teaching:[1]

[1] Reprinted with permission of Ohio University.

AGREEMENT

THIS AGREEMENT made this —— day of —— between the Board of Education of the city of Athens, Ohio, and Ohio University:

WITNESSETH, That the parties of this agreement each in consideration of the agreements on the part of the other herein contained, do hereby agree, the Board of Education for itself and Ohio University for itself, as follows:

1. That the Board of Education:

(*a*) Permit the University to use such classes and rooms in the Athens School System as the University deems necessary for its practice teaching and observation, the selection to be approved by the City Superintendent of Schools.

(*b*) Permit the University with the advice and counsel of the Superintendent of Schools to designate teachers already in the Athens School System as critic teachers for those rooms where the University shall place practice teachers.

(*c*) All critic teachers, supervising principals, and superintendent shall be approved by both the University and the Board of Education.

(*d*) The Board reserves the right to retain any teachers now in the schools.

(*e*) Until the discontinuance of the University High School the Board agrees to continue the financial arrangements now existing between the Board and the University and to pay such additional critic teachers as may be employed the maximum salaries paid to non-critic teachers of the same rank during the school year 1922–1923. When the University High School is discontinued the University agrees to pay all salaries for instruction except those of teachers in the schools owned and operated by the Board of Education. In the event larger building facilities are furnished by the University, the Board of Education agrees to pay the additional teachers at the same rate and in the same manner as in the buildings provided by the City. Critic teachers in the schools owned and operated by the Board of Education will receive from the Board the maximum salaries according to the schedule, paid by the Board to other teachers of the same rank during the school year 1922–23, and shall have their salaries supplemented by the University. In the event of the employing of critic teachers for new subjects or new grades the Board will pay toward the salaries of such teachers what it finds to be the usual salaries paid to non-critic teachers under similar conditions. In the event of any general reduction in teachers' salaries at the request of the Board a joint committee of the Board and the University shall be ap-

pointed to determine what salaries shall be paid by the Board; the findings of such committee to be subject to the approval of the Board before adoption. Likewise, in the event of any general increase in salaries the above joint committee shall at the request of the University make recommendation to the Board relative to increase in salaries.

(*f*) Permit the University to supervise and direct the teaching of the critic teachers and the practice teachers in the Athens School System, subject to the suggestions and recommendations of the City Superintendent. The Superintendent of City Schools may be called into conference at any time by the University for discussion of matters of mutual interest.

(*g*) Enforce all school laws relating to attendance, incorrigibles, medical inspection, records, and registrations.

2. That Ohio University:

(*a*) Supplement the salaries of those teachers designated by the University as critic teachers.

(*b*) Consider all members of the teaching force whose salaries are supplemented by the University to be members of the faculty of the College of Education. All such critic teachers are members of the corps of city teachers and as such are subject to rules and regulations of the City Superintendent.

(*c*) Employ a director of the training who shall be approved both by the University and the Board of Education, who shall have charge of the teacher training and all instruction and materials of instruction in that portion of the school system which is being used by the University for the teacher training; and likewise such supervisors of regular classroom instruction as shall hereafter be deemed necessary to be selected by the University. The director of training may be required by the Board to attend any or all meetings of the Board.

(*d*) Discontinue the University high school.

(*e*) Operate the present Elementary Training School at the University as a training or a model observation school to be maintained as at present. This school shall conform to all arrangements in this agreement except that the 50% limit in practice teaching shall not apply until September, 1925.

3. All courses of study, the selection of instructional materials, and assignments of pupils for instructional purposes shall be made by the superintendent of schools and the director of training and be approved by both.

4. Not more than fifty per cent of the teaching shall be done by practice teachers. This limit shall apply both as to each particular room in the grades and subject in the high school.

5. Detailed working arrangements shall be worked out by the superintendent and the proper University officials and submitted to the Board and the University for final mutual approval before being put into effect.

6. This agreement is to be effective September 1, 1923, with the exception of exceptions noted in the contract and that portion relating to the discontinuance of the University high school. It will be discontinued when the Board of Education has facilities to take care of the students who would go over to the Athens high school from the University high school.

7. This agreement may be terminated by either party to the agreement on June 1st of any year, provided notice in writing is given to the other party on the September first preceding.

Other institutions are less fortunate than Ohio University. Some departments of education find it necessary to depend entirely upon the good will of the local school superintendents, principals, and teachers for permission to do the required observation and practice teaching. Such conditions seriously handicap the teacher-training institution in its effort to turn out well-equipped teachers. Even under these adverse conditions a surprising amount can be accomplished by tactful and effective supervision.

Student teachers should understand conditions under which they are teaching. It is important that student teachers representing institutions which have no model school be fully aware of the precarious conditions under which the observation and practice teaching is being carried on so that their every move may satisfy and further promote the good will of the public-school teachers and administrative officers and thereby make possible the training of those who are to follow them. Indifference and lack of preparation on the part of one student teacher may not only cause the classroom teacher to deny another student such privileges but may cause several of her colleagues

to do likewise. Consequently it behooves every student teacher working where such relations between the department of education and the public school obtain to keep in mind those who are to follow him, work at his maximum efficiency, and do all in his power to promote the good will of both the faculty and the pupils of the public school.

All criticism of classroom instructors and methods must be confined to reports and conference. It is very important, especially in the case of practice teaching outside of model schools, to discuss only with the supervisor or with the classroom instructor himself what takes place in the classroom. Discussions at boarding-places or rooming-places on the happenings in the classroom reach the parents and teachers with surprising speed. Then, too, they are generally so distorted as to present the classroom in a bad light before the parents. The experienced teacher has learned to exercise discretion in discussing school problems, whether they concern the general administration of the system or are limited to classroom procedure. This the practice teacher should learn as part of his preparation for teaching.

Beginning teachers must learn to adjust themselves to the system in which they are to teach. Whether the student teacher is doing his practice teaching in a model school or in a public school, he is about to enter a system. He will not be free to do as he pleases but must adjust himself to things as he finds them. He may have had previous experience in another system. In that event there is danger that by calling attention in a tactless manner to the way in which he is in the habit of doing things he will antagonize members of the system in which he is to do practice teaching. The practice teacher should be docile and open to suggestion. He is present to learn what he can and not to instruct. There will be times when he may honestly feel that the classroom teacher could improve his method at certain points. At such times he should discuss mat-

ters frankly with his supervisor, meanwhile following the directions of the classroom teacher. He should keep in mind that he is soon to have a class of his own and will have freedom then to try out his ideas.

Classroom teacher's first duty to pupils. Whether observation and practice teaching is done in a model school or in a public school, the classroom teacher's first duty is toward the pupils. Hence the student teacher must teach effectively from the start. His program must be light enough to allow the most careful preparation of the lesson, and under no condition should he appear before a class without having his lesson fully prepared. Should he, for reasons beyond his control, be prevented from preparing a lesson, he must notify both the classroom teacher and the supervisor at once, so that other arrangements for the class may be made. It is very desirable that, at the beginning, lesson plans be made and accepted at least a day before the teaching of the lesson. This will enable the supervisor to cause necessary modifications of the plans.

Care must be exercised not to disturb the class while observing. Every effort should be made to observe without disturbing the class. This is not an easy thing to do. The very fact that there is a stranger in the room is bound to affect the instruction. If being observed does not affect the teacher directly, it is bound to do so indirectly by acting as a distracting element for the pupils. Hence it is important that the observer do all in his power to prevent distraction. This is equally desirable whether the observer is a student observing the regular classroom teacher or the supervisor observing a student teacher.

Observer should enter the room before class begins and remain throughout the instruction period. It is generally very disconcerting to the classroom teacher to have a visitor enter while the class is in progress. This is especially true if the visitor is to pass judgment upon the teaching. Although leaving the room attracts less attention than entering, it nevertheless

is a disturbing element and should be avoided, especially by student observers, who ought to cause as little disturbance as possible. Then, too, it is unfair to the classroom teacher to judge his work after entering late, seeing a small part of the performance, and then departing. One of America's most famous educators, when a young man, is said to have told his supervisor to enter a class at the beginning of the period and stay through the entire session if he wanted to gain any notion of a young teacher's ability. When an observer, especially one higher in authority than the classroom teacher, enters the room during the class period, the pupils are keen to note the sensitiveness of the teacher to the situation. The teacher, aware of this fact, is sometimes made doubly sensitive. Under these conditions the work of even the best teacher will not appear to good advantage. If, however, the room must be entered while the class is in session, it should be entered by a rear door if there is one, and with as little noise as possible.

Observer should not appear to notice the pupils' reactions. The "smart Aleck" who tries to disturb the class by attracting attention to his clownish acts will be encouraged by the smile of the visitor. Encouragement of this sort must never be given. The proper attitude to maintain is that of completely ignoring the trouble-maker. Often, too, the well-meaning pupil will be found attending to the observer. This also can be minimized by the visitor's looking in another direction and paying no attention to the pupil.

Observer should avoid such reactions as would enable the pupils to determine his approval or disapproval of the lesson. Changes in the observer's facial expression or bodily posture which take place simultaneously with the teacher's variations in forms of procedure, especially if the teacher is meeting with difficulty in conducting the lesson effectively, may enable the pupils to detect the visitor's approval or disapproval of what is going on. Situations of this kind are sure to embarrass the

teacher still more and to weaken to some extent his hold upon the class. Hence the observer, whether he is a student observing a regular classroom teacher or a supervisor observing student teaching, should maintain as noncommittal an attitude as possible. The more impassive he can appear to what is going on in the room and yet observe all that is going on, particularly that which he came primarily to observe, the more efficiently has he filled the rôle of observer.

Note-taking must be done with care. It is because of the ill effects, discussed in the foregoing paragraph, which may follow from an observer's disclosure of his thoughts that few notes should be taken while observing. If the observer is seated in the rear of the room he may be able to take a few abbreviated notes without attracting the attention of the class. However, even this may be observed by the teacher and may cause him annoyance. If the student observer brings a list of prepared questions so constructed that a plus or minus or check will serve as material for reconstructing the notes later, it greatly facilitates the process of nondisturbing observation. In the first place more time is left for observing, and in the second place the distracting element is greatly lessened.

The writer's experience in supervising student observation has led him to request that observers take no notes in class, but write rough notes as soon as possible after class. They can write the notes out in full after they return to their rooms or to the university. This requires the student to study carefully before entering the class the points which he is to observe. If any note-taking during observation is permitted, the student should do as much abbreviating as possible and jot down the notes at such times as to interfere least with observation. The observer who begins to write the minute he locates a point that he wishes to note is likely to miss the setting and full significance of that point. For example, let us suppose the student to be observing discipline. A pupil distracts the class; the

teacher stops work and, looking intently at the pupil, waits for order. Let us suppose that the observer begins immediately to write. He may overlook the fact that the teacher after stopping work does not take his eyes off the offender until resuming the discussion. He is likely also to fail to observe carefully the effect of the disciplinary device upon the pupil. Then, too, the fact that the observer is writing is likely further to distract the class and to embarrass the teacher. If a few abbreviated notes are jotted down after the incident is entirely passed the observer is likely to have observed more effectively and with a minimum amount of distraction to the pupils. In general the better prepared the student is for the observation the less writing will be required and the more efficiently the observations can be made.

Student teacher must be desirous of becoming a good teacher. The student who does not intend to enter upon the work with the utmost seriousness should not sign up for observation and practice teaching. The attitude of just getting by is fatal to the entire program. The student teacher who is not willing to exert himself to the utmost, so that each day may find him teaching a better lesson than the previous day, is a liability to all concerned. The good supervisor will not tolerate indifference. Apart from the fact that such teachers may cause the public-school authorities to stop practice teaching entirely, the supervisor as a representative of the teaching profession should feel in duty bound to prevent one with such an attitude from obtaining a license to teach. The teaching profession upholds the highest ideals of service. Timeservers are not wanted.

GUIDE TO OBSERVATION AND REPORT

1. If possible, enter the room before the pupils take up the work.
2. If possible, enter the room by a rear door.
3. Quietly take a seat in the rear of the room.

4. Avoid taking any notice of those pupils who would prefer to attend to you rather than to the work at hand.

5. Notes should be abbreviated so that the student may give a maximum amount of time to observation and a minimum amount to writing. A prepared (preferably mimeographed) outline with detailed questions that may be answered by Yes or No, such as accompany this text, facilitates note-taking.

6. Avoid facial expressions which might denote approval or disapproval of what is going on.

7. If it is necessary to leave the room before the class is dismissed, go out by a rear door if there is one, making as little noise as possible.

8. After observation the student should retire immediately to his study or the library and write up the notes in full.

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BAGLEY, W. C. Classroom Management, pp. 275–279. The Macmillan Company, 1907. A good discussion dealing with the need for relating theory, observation, and practice.

COLVIN, STEPHEN S. An Introduction to High School Teaching, "Existing Agencies for Training Secondary Teachers," pp. 46–48. The Macmillan Company, 1917.

MAXWELL, C. R. The Observation of Teaching, chaps. i–iii. Houghton Mifflin Company, 1917. Deals with the nature, purpose, and value of observation.

LESSON II

Aim. *To become acquainted with the pupils whom the student is to teach later to the extent of knowing their names and something of their individual peculiarities which are likely to affect them as members of the class.*

The first consideration of the student observer is that of learning the names of the pupils whom he is to instruct later. If possible he should have prepared, previous to class, a plat of the room showing the seating. The position of the teacher's desk should be included, as this will aid in reading the plat. The student should enter in the proper rectangles the names of pupils as rapidly as he learns them, making a conscious effort at the time to connect the name with the face and both name and face with the location. If the teacher has such a plat which the student can copy before the class, so much the better. He can then give the entire class period to connecting names and faces with their location.

The making of the plat will require the student to do considerable writing while observing. Writing is not objectionable at this point if the teacher is aware, as he should be, of the student's task on that day.

After the lesson the student should take the plat to his room and study it until he is able to visualize the position of each pupil and at the same time to recall the name. This will not entirely suffice, however, and hence the plat should be taken to future observations until the student is in complete mastery of the name and location of each pupil. A duplicate of the chart should be made and given to the supervisor unless otherwise requested. It will serve as a record of this observation.

GUIDE TO OBSERVATION AND REPORT

1. Arrive early enough to meet the teacher before the class enters. Introduce yourself and tell your purpose. If proper arrangements for your observation have been made by those in charge of the work, this will suffice.

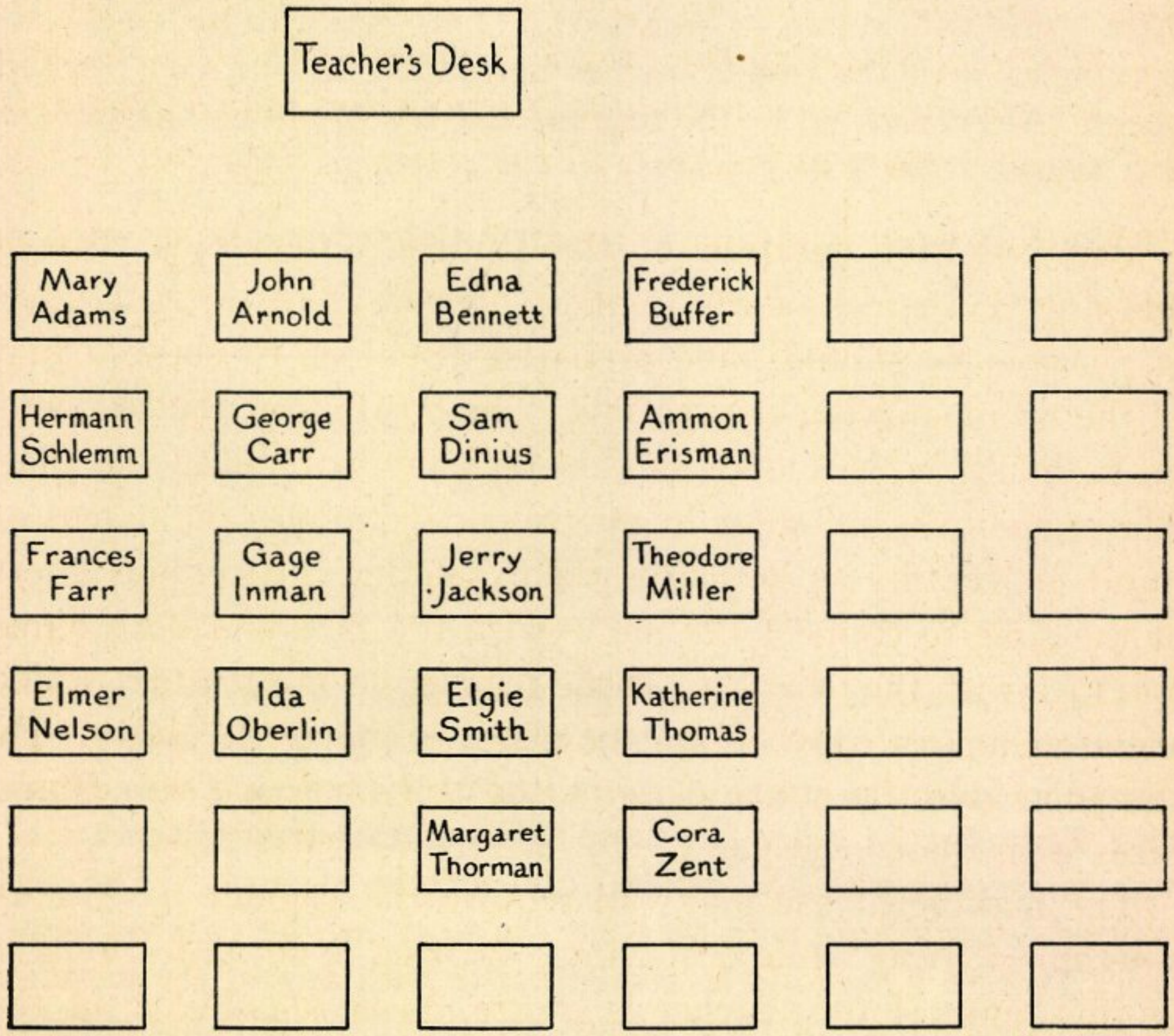


FIG. 1. Seating Plan

This diagram shows the seating arrangement of a room with the name of the pupil occupying each desk. A similar diagram should accompany the report of this observation

2. Determine also, before class work begins, whether or not seats are assigned to pupils.

3. If the seats are not assigned to the pupils, as may be the case in junior and senior high-school work, spend the hour trying to fix in mind as many names of pupils as possible. After class try to obtain a list of the names. Copy these and try to associate them

with your mental image of as many as possible. Continue this until all the names are properly associated with the members of the class.

4. If seats are assigned to the pupils, with ruler and paper make a rough diagram of the seating in the room. Let rectangles of some convenient size represent the seats occupied by the pupils. Let a large rectangle appropriately placed represent the teacher's desk (this will aid in orientation). This done, begin to fill the rectangles with the pupils' names as rapidly as you can discover them. After class go to the teacher and try to obtain the remaining names. (See Fig. 1, p. 15.)

The following is a sample report on observation accompanying Lesson II:

OBSERVER: XXX

SCHOOL: XXX

CLASS: English 11B

The class which I am observing for a short period is a group of eighteen juniors who are undertaking a study of the novel. The course includes the study of *The Vicar of Wakefield*, *Lorna Doone*, and *The Rise of Silas Lapham*. During this first observation I was impressed with the general atmosphere of study. The class seemed to anticipate with pleasure the work for the ensuing semester. Though I have slight acquaintance with any of the members of the class, many of their names are familiar; it is not difficult, therefore, to associate their names with their faces.

The figure on page 15 is a diagram of the room including the seating arrangement which accompanied this report.

LESSON III

Aim. *To understand the problem of lighting a schoolroom properly, with particular reference to the room in which the student is to teach, with a view to becoming, as a future teacher, more conscious of this consideration and better informed upon the principles governing it.*

It would be difficult to overestimate the importance of lighting in the schoolroom in which a large amount of time is spent in reading. Bad lighting, there is reason to believe, causes much eye trouble; and thinking is greatly impaired during eyestrain.

Defects in lighting are of two sorts: first, the light supply may be insufficient; secondly, the light may enter the room from such directions as to cause cross lighting or to fall directly into the eyes of those at work. With respect to the amount of light the chief danger is that there be too little of it. Under no conditions should the window space be less than one fifth the floor space. The direction from which the light comes is an important matter also. In order to prevent cross lighting it is necessary that all windows be located on one side of the building or that the light enter the room from above. However, the entrance of the light at the ceiling is not so desirable as its entrance at the side and from the left. This is owing to the fact that when light comes from above the pupil is likely to work in his own light. Windows should be at least three and one-half feet from the floor and extend as nearly to the ceiling as possible.

Artificial lighting is always necessary on dark days or during storms. There seems to be some conflict of opinion as to the relative merits of direct and indirect lighting (in indirect light-

ing the light is reflected to the ceiling or a reflector and then back upon the floor). In direct lighting frosted bulbs and reflectors should be employed. The distance which the lights should hang down will depend upon the height of the ceiling and the amount of floor space to be covered by each light. A test

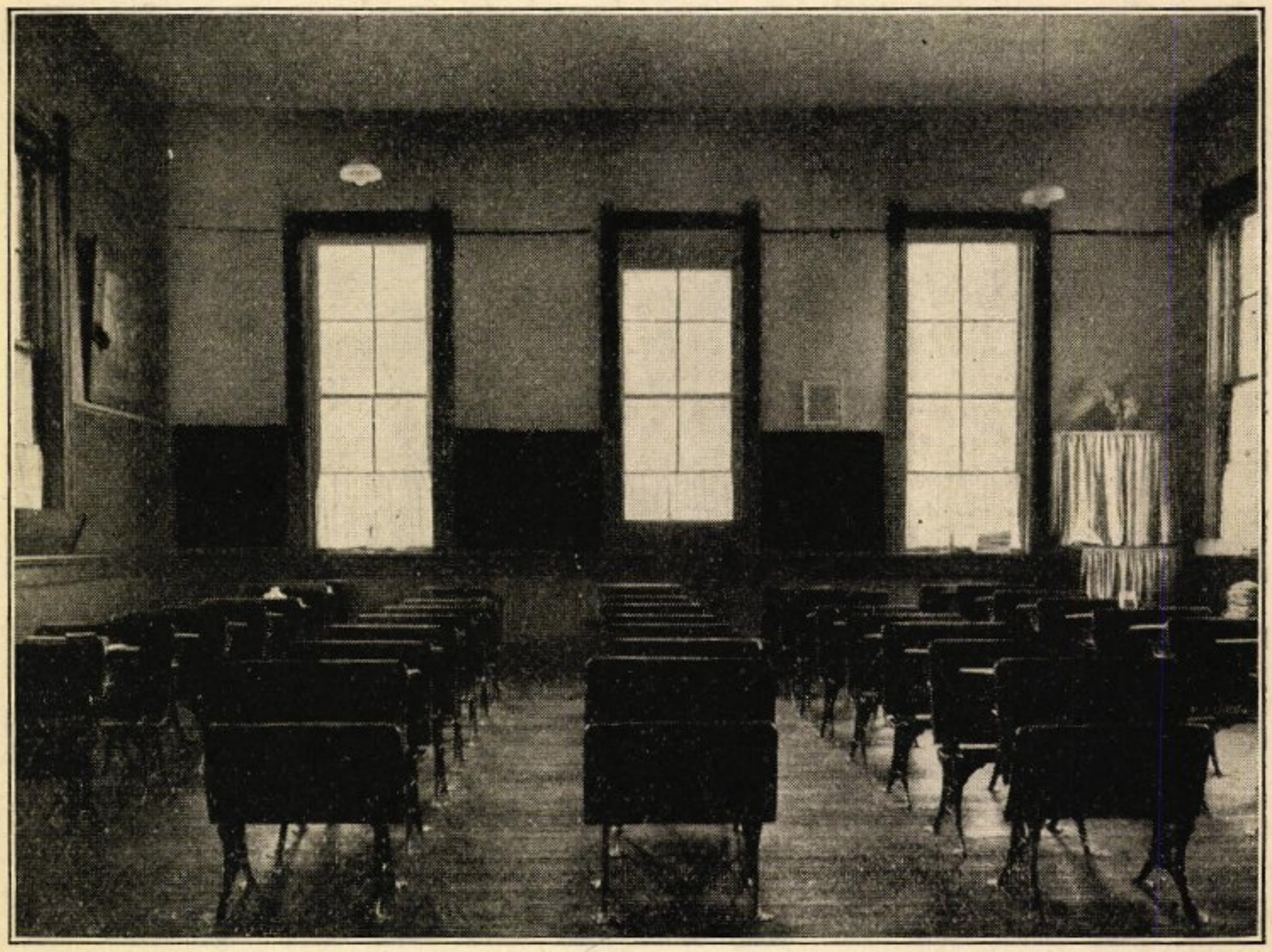


FIG. 2. A Badly Lighted Schoolroom

The light enters this room from three sides. There is no blackboard space in the room upon which written material can be seen by all the pupils while seated. At the same time glares are produced which are injurious to the eyes of the children. Observe the fact that the window shades roll down from the top, thus making it impossible at times to screen children from the direct rays of the sun without seriously reducing the amount of light available

should be made by darkening the room and turning on each light separately, in this way determining the space covered by each. The color of the wall should be such as to absorb as little as possible of the light without presenting a glaring surface. For example, brown reflects about 10 per cent of the light, green about 20 per cent, yellow about 60 per cent, and an unglazed

white surface about 80 per cent. Considering only the efficiency of lighting, the above colors are desirable in the order in which

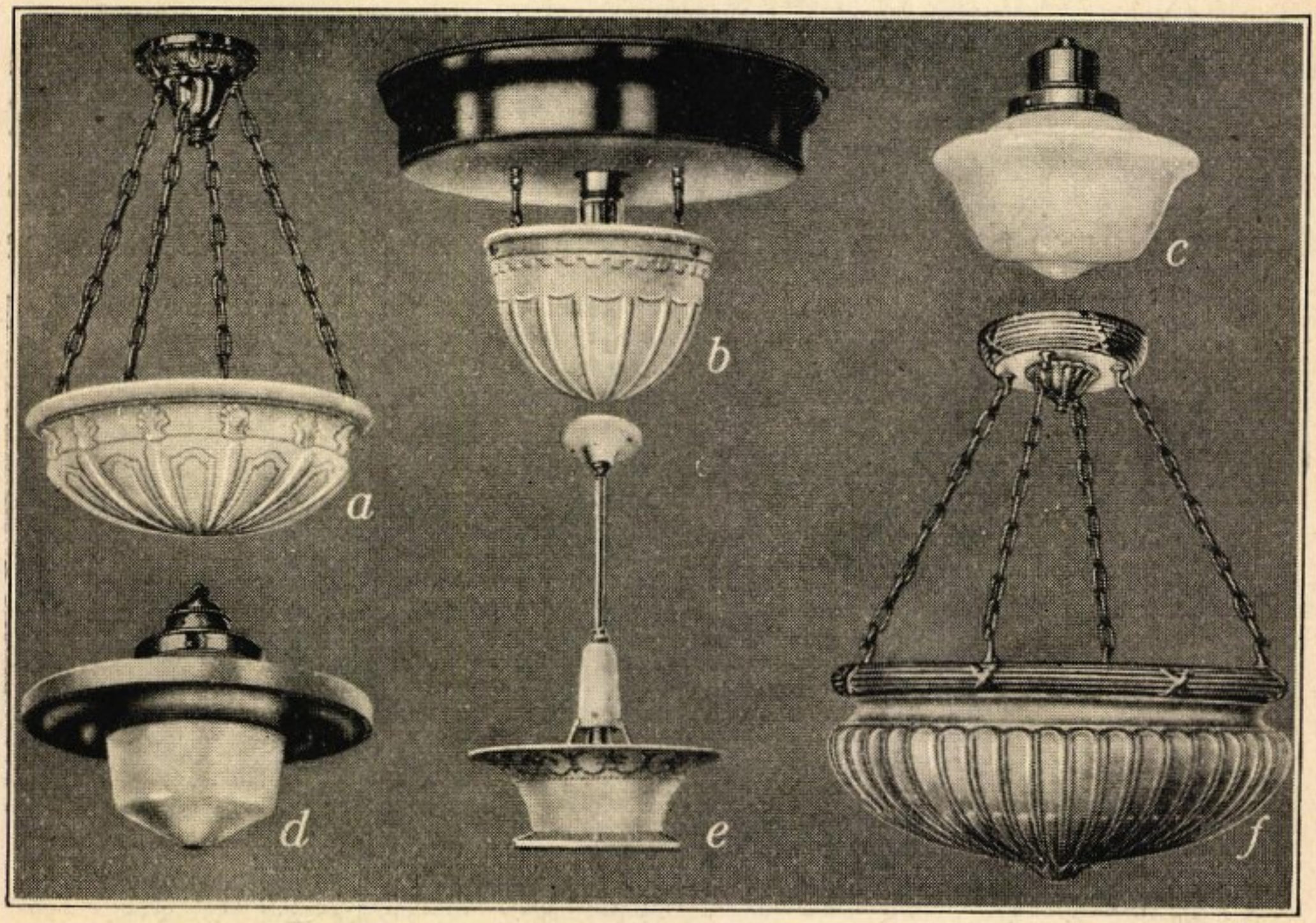


FIG. 3. Types of Lighting Fixtures

a, *b*, *d*, and *e* are types of semi-indirect lighting units; that is, they give two components of light, one coming directly through the translucent bowl, the other passing upward, striking a reflecting surface, and from there being directed downward. The reflecting surface in *a* and *e* is the ceiling and in *b* and *d* is a porcelain enameled reflector. *a*, *b*, and *e* are subject to the criticism that dust collecting upon the interior of the bowls interferes with the transmission of light. This objection is not present in *d*, which is inclosed. *e* is a modified form of *a* in which lighting qualities are sacrificed for æsthetic qualities. *c* has an inclosing globe, the sole purpose of which is to diffuse the light and remove the glaring filament from the field of vision. *f* is known as a totally indirect luminaire. It is lined on its inner surface with a mirror-like reflector which reflects the light to the ceiling, or to a reflector, where it is diffusely reflected to the lower part of the room. It is affected by dust more than any of the others. On this account it is not suitable for schoolroom use. Its chief merit is that it gives a more perfect diffusion of light with the consequent absence of shadows and glare which in itself is very desirable

they reflect increasing amounts of light; however, cream or buff is considered more desirable for æsthetic reasons.

No study of the lighting of a room is complete which does not take into account the color, material and arrangement of

the window shades. The color of the shades should be similar to that of the walls, although somewhat darker. The material should be such as to make them opaque. Shades should roll from the bottom of the window up. This arrangement will make it possible to exclude the light from the level of the children's eyes and allow the light from the upper part of the window to diffuse through the room. Venetian blinds should never be used, for they admit the light in bands of light and shadow, which are very bad for the eyes.

GUIDE TO OBSERVATION AND REPORT

1. Measure or, if that is impossible, estimate window space and floor space and determine the ratio of the former to the latter.

The student should be able to read without strain the following specimen at a distance of twelve inches in any part of the room:

> And remember how he hath made you successors to the Adites, and given you dwellings on the earth, so that on its plains ye build castles, and hew out houses in the hills. And bear in mind the benefits of God, and lay not the earth waste with deeds of license. — Koran, chap. lxxxvii.

2. How nearly does the placing of the windows conform to the criteria set forth in the discussion which precedes this observation outline?

3. Is artificial illumination used to supplement the natural?

4. Is artificial illumination direct or indirect?

5. Are lights so distributed as to give uniform illumination?

6. Do shades roll from the top down, from the bottom up, or from the middle both ways?

7. Are Venetian blinds used?

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RAPEER, L. W. Educational Hygiene, pp. 339–343. Charles Scribner's Sons, 1915.

United States Bureau of Education Bulletin No. 12, 1914, pp. 59–61. This is one of the best discussions available on schoolroom lighting. It is recommended that "all left-handed children should be taught from the first to write with their right hands as this will make unilateral lighting more feasible." The writer questions the wisdom of this recommendation in view of the fact that there is a possibility that such a change would introduce speech defects. For further discussion of lighting see pages 49–50 of *Bulletin No. 12*.

United States Bureau of Education Bulletin No. 50, 1915, pp. 83–87, "How Eyestrain is caused by Improper Lighting."

United States Bureau of Education Bulletin No. 65, 1919, pp. 14–30, "Eyesight of School Children." This is a well-illustrated discussion on the problem of lighting.

The following is a sample report of an observation accompanying Lesson III:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Fourth and Fifth Grades

The room is lighted by five windows (8 × 3 feet, estimated), making a total of 120 square feet of window space. I estimate the floor space to be about 20 × 30 feet, or a total of about 600 square feet. The amount of window space is about right, considering the size of the room, if it were not for the fact that the design of the building has made it necessary for all the light to enter from the rear, which is the narrow side. The result is that artificial lights have to be used most of the time in order to secure effective lighting in the front of the room. Some light may enter the front of the room through a cloakroom entrance on one side. When this door is open all the ill effects of cross lighting result, making it impossible to use the front board.

The teacher reports that she seldom uses the front board, because the pupils cannot see the work. This is owing in part to

the ill effects of cross lighting and in part to the lack of sufficient light. I should suggest that a blackboard reflector be placed above the board and that the board be lighted artificially when in use. The light could be turned off at other times.

The natural light is supplemented by four electric lights suspended from the ceiling. The artificial lighting is direct. A reflector is placed above each light. The bulbs are not frosted. As the lights are strong (sixty-watt bulbs) one is partially blinded by their glare at each chance look at them. The artificial lighting could readily be improved by putting in frosted bulbs or by covering the bulbs with reflecting globes.

LESSON IV

Aim. *To understand the problem of ventilating and heating the room in which the practice teaching is to be done later, with a view to becoming, as a future teacher, more conscious of these considerations and better informed upon the principles governing them.*

Ventilating and Heating

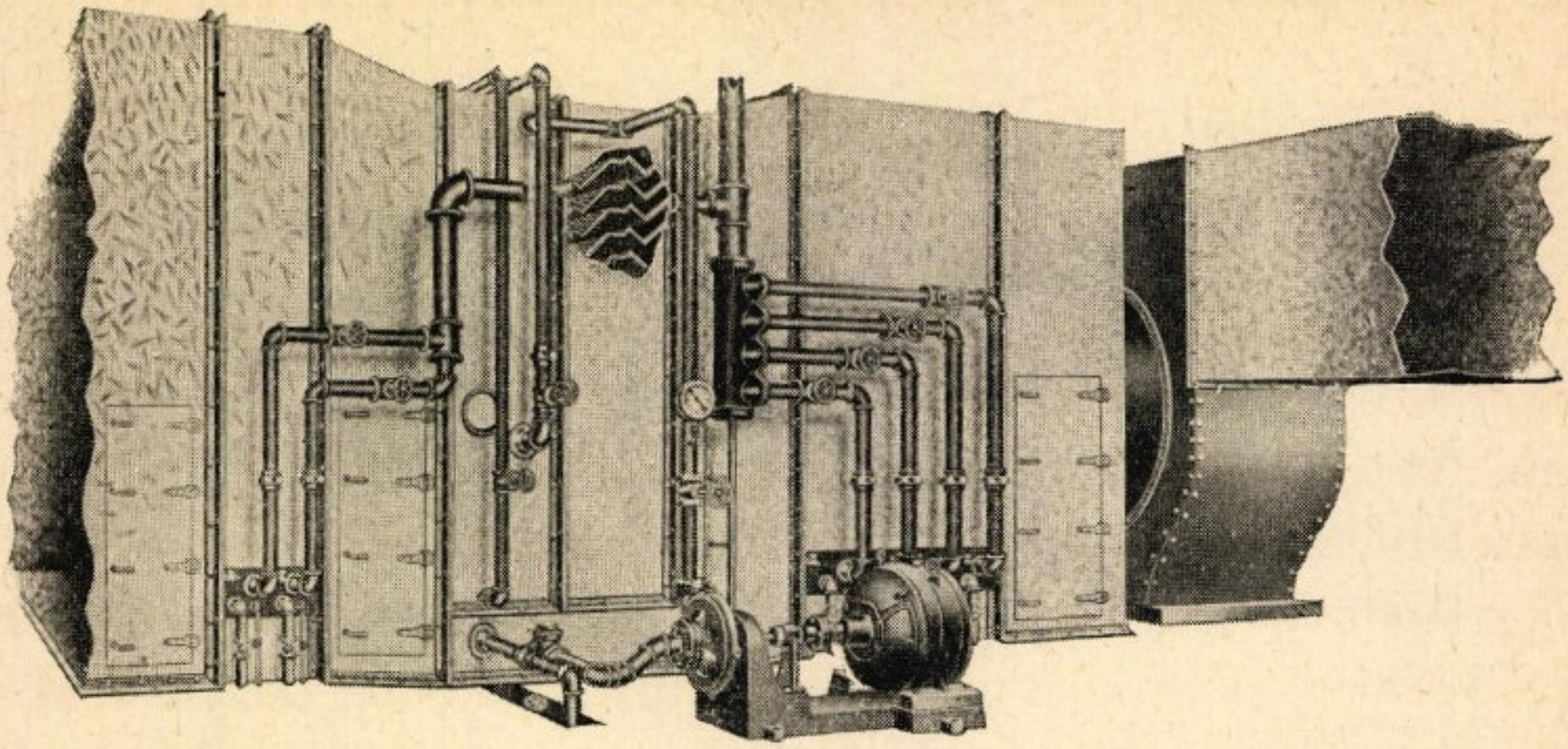
Ventilating. Another important consideration in a properly designed schoolroom is the matter of proper ventilation. The amount of carbon dioxide in the air is no longer considered the chief cause of the ills of poor ventilation. Breathing and the perspiring of the body increase the humidity of the air and hence give those in the room the feeling one has on a summer's day when heat and humidity are high. The increased humidity lowers the rate of evaporation, which causes a rise in the body temperature, and the pores of the skin dilate in order to offset this effect. A pupil leaving the room or suddenly exposed to a draft while in this condition is much more likely to take cold than if the room had been heated and ventilated properly. The increasing amount of water vapor, charged as it is with the waste products of the body, causes very unpleasant odors. All this leads to conditions which are unfavorable to the learning process.

The methods by which ventilation is secured are of two sorts: those depending upon gravity and those depending upon mechanical devices. The gravity methods depend upon the fact that warm air is lighter than cold and tends to rise, whereas cold air tends to fall. At first one would think that the warm

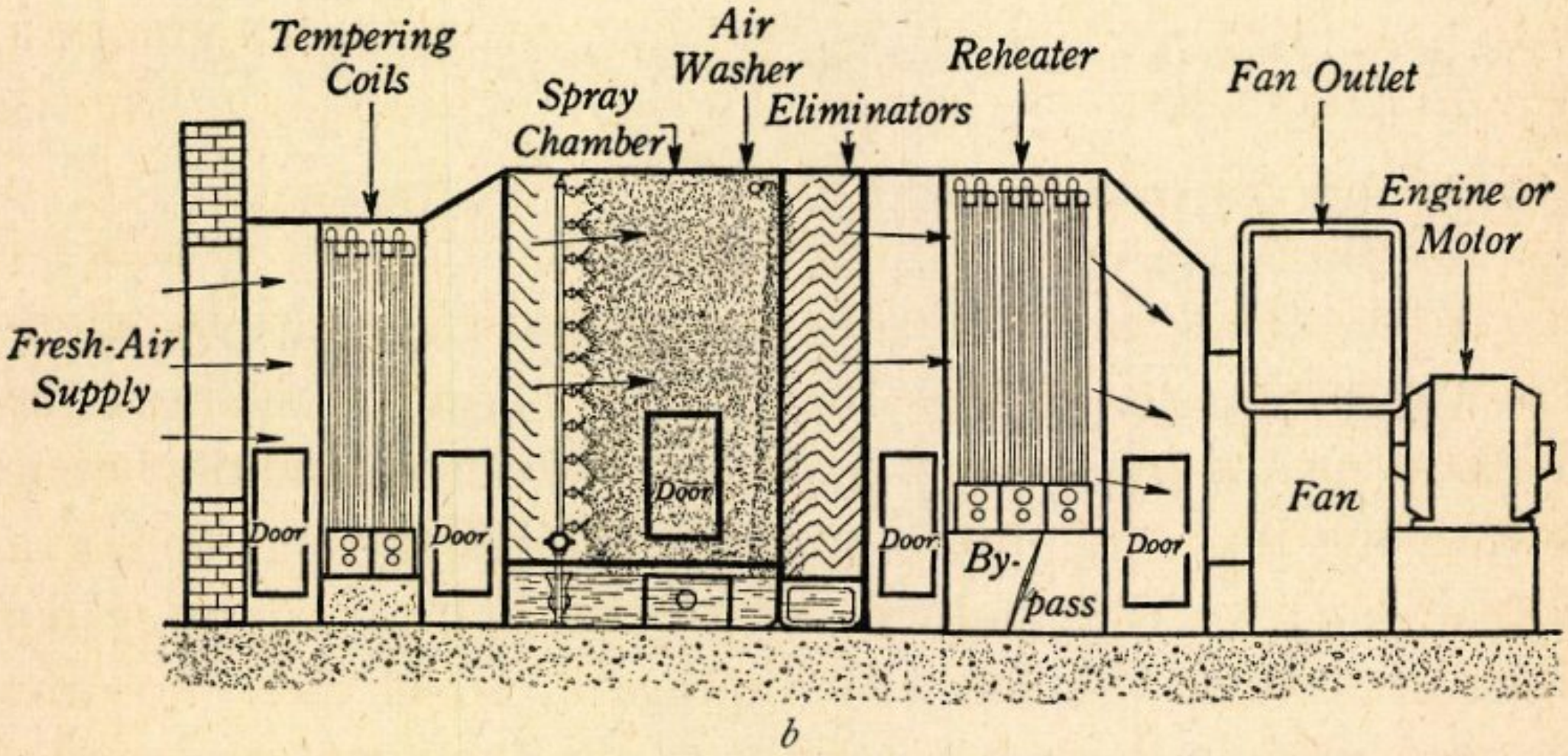
air should enter the room near the floor, passing out of the room near the ceiling. This arrangement tends to cause the air to pass directly from inlet to outlet, leaving large eddies of unchanged air in the room. The better method is to have the air enter near the ceiling and leave at the floor or near it on the same side of the room. It is important that the inlet and the outlet be large, from four to five square feet each in a schoolroom of average size, in order to permit thirty cubic feet of fresh air per child per minute without increasing the incoming velocity to more than four hundred feet per minute. It is considered somewhat more satisfactory to have the inlet and the outlet surfaces distributed so that the incoming air enters at several points near the ceiling and the outgoing air likewise leaves at several points in or near the floor.

The gravity system, owing to the fact that its working is affected by the temperature of the outside air and also by winds, is not entirely satisfactory; hence resort is often made to mechanical means for forcing air into the room (plenum system) or drawing it out of the room (vacuum system). A combination of the two is sometimes employed. The vacuum system when used alone has the disadvantage of being likely to draw air from openings, such as windows, in one room and to fail to empty properly another room.

Heating. The heating may be carried on by means of steam, hot water, or hot air. Everything considered, steam seems the most satisfactory. When pressure is high it can be used to drive the ventilating force; owing to its intense heat it warms rooms quickly; it is not so subject to the danger of frost as the hot-water system. On the other hand, the hot-water system is somewhat cheaper when once installed. Hot air is often dry and this system has the disadvantage of not working well during high winds and low temperature. If the hot-air system is used it will suffice for both heating and ventilating. However, care will be necessary to insure the proper humidity of the air.



a



b

FIG. 4. Air-Washing and Ventilating Apparatus

This device makes it not only possible to remove the dust particles from the air but to raise the air to a desirable classroom temperature and humidity as well. The fresh air is drawn into the building by means of a fan (see *b*). It then passes over tempering coils, which raise it to a temperature at which it will take on and hold a desirable amount of water vapor. The air then passes into a spray chamber, in which many fine sprays of water remove the dust particles and add a desirable amount of water vapor. Owing to the fact that the air passes rapidly through the spray chamber some water is held in mechanical suspension. This is removed by eliminators, over which the air passes after leaving the spray chamber. The eliminator consists of complicated baffle plates which cause the air to change its direction suddenly and several times in succession, with the effect that the water particles impinge upon and adhere to the baffle plates. The air with its charge of water vapor next passes over another set of coils, which serve to raise it to the temperature desired in the classroom. It then passes to the fan outlet to be distributed to the various rooms of the building

GUIDE TO OBSERVATION AND REPORT

Ventilating

1. Determine, if possible, whether a gravity system or some mechanical system of ventilation is being used.

2. At how many points does air enter and leave the room?

3. Estimate the number of square feet of inlet.

4. If an anemometer can be obtained, measure the rate of the incoming air and determine the number of cubic feet of air per child per minute. To obtain the number of cubic feet entering the room per minute multiply the velocity at which air enters per minute by the area in square feet of the inlet openings.

5. Is the flow of air obstructed by the design of the screen covering the inlets?

6. Is any attempt made to filter the incoming air? If so, describe the device used.

7. Is air drawn from a cellar or some point above the ground?

8. What arrangements have been made to insure proper humidity in the room? If hygrometer can be obtained measure the percentage of moisture. (Standard, 55 per cent saturation.)

Heating

1. How is the room heated? by steam, hot water, or hot air?
2. How many thermometers are in the room?
3. Where are the thermometers located?
4. What is the temperature of the room?
5. Is it equal in all parts of the room?

Note. Only part of these observations can be carried on during the class period. The remainder should be done immediately after school or during the noon or the recess period.

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TERMAN, L. M. The Hygiene of the School Child, chap. x, pp. 148–166, "The Physiology of Ventilation." Houghton Mifflin Company, 1914.

The following is a sample report of an observation on Lesson IV:

OBSERVER: XXX

SCHOOL: XXX

CLASS: English 9B

The system of ventilation is inferior. Though the teacher is not supposed to do so, it is necessary occasionally for her to ventilate the room by opening the windows. A mechanical system is used, but the engine that drives the fan is often idle. The ventilation intake, which consists of one opening 1×2 feet, is located near the ceiling. There is but one outlet, which is about $2\frac{1}{2}$ feet square. The air is supposed to be washed by being driven through a water-soaked screen.

The room is very evenly heated by steam, and the temperature on an average is about 75 degrees Fahrenheit. There is only one thermometer in the room, which is fastened on a door frame at the front of the room about 3 feet from the floor. It would be better to attach the thermometer to the teacher's desk or to one of the pupils' desks nearer the center of the room. The temperature at either of these points would be more indicative of the actual temperature of the room.

LESSON V

Aim. *To understand the problem of seating and blackboards from the standpoint of schoolroom hygiene in general and to evaluate in terms of this study the room in which the student is to teach later.*

Seating and Blackboards

Seating of pupils. In schoolroom designing the question of seating is too often given but little consideration. The principles of lighting studied in Lesson III make certain seating requirements very important. For example, if the pupils face the long side of the room, too little lighting space is allowed and the desks on the far side of the room are poorly lighted. Then, too, pupils seated on either side get only a side view of material placed on the front blackboard or displayed by the teacher. Although there is, of course, a limit to conservation of aisle space (pupils should be able to pass each other conveniently in the aisles), it is important that the space around the board should be ample for work. Experience demonstrates that the space between the desks and the board at the rear and side of the room should not be less than four feet. This will enable pupils to pass by others at work at the board without danger of congestion. It will also enable those sitting in the front and those sitting in the rear of the room to see conveniently what is put upon the side board and those on the sides to see the work on the rear board without leaving their desks.

Pupils' desks and seats. Since the pupils are sitting many hours each day it is very important that the seats be so constructed as to fit the child at work. However, in the effort to

meet this requirement one must not overlook certain other needs. It is necessary that janitors be able properly to sweep the floor beneath the desks and also to remove the dust from the desks themselves. The writer has seen desks and seats from under which it was almost impossible for a janitor to remove

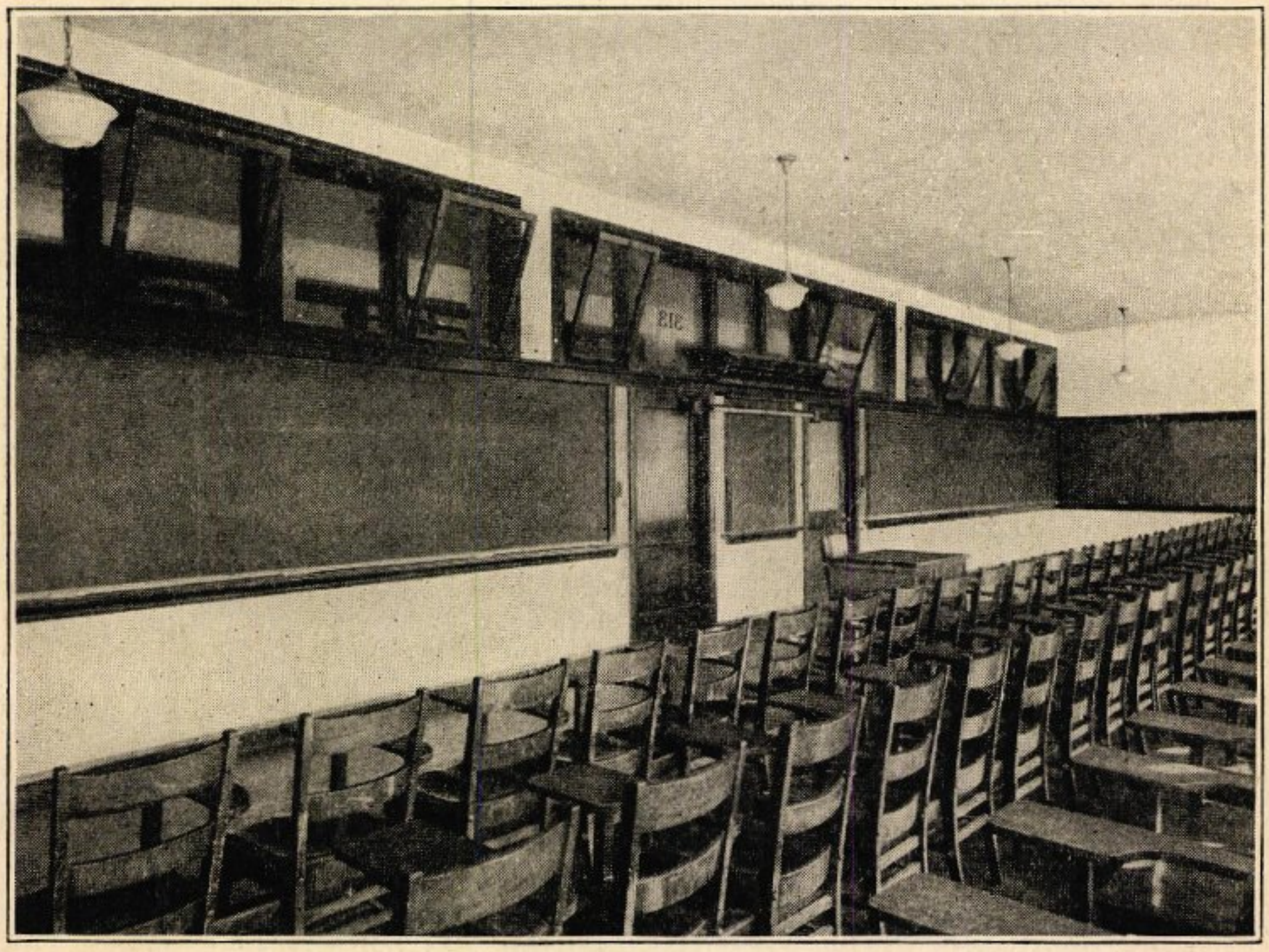


FIG. 5. A Poor Blackboard Arrangement

This shows a situation in which the pupils face the long side of the room, with the result that those seated at one side of the room cannot see material written on the board at the other. When the room is full it is impossible to use the board except for examination purposes. It is then necessary to write the questions on the board at one end of the room and duplicate them at the other

the dirt with any known instrument. Many of the old-style desks and seats were supported by cast-iron standards the design of which gave a trellis effect. These were dust catchers, and have been largely done away with. The tendency is to avoid as much as possible all desk construction that is not conducive to schoolroom sanitation.

Both desks and seats should be adjustable. If desks and seats are not adjustable, it is impossible properly to fit each child. One of the objections to adjustable seats and desks has been that they wear loose at points of adjustment and hence move around with the movements of the pupils, thus causing disturbance in the room and discomfort to the pupils. This objection has been

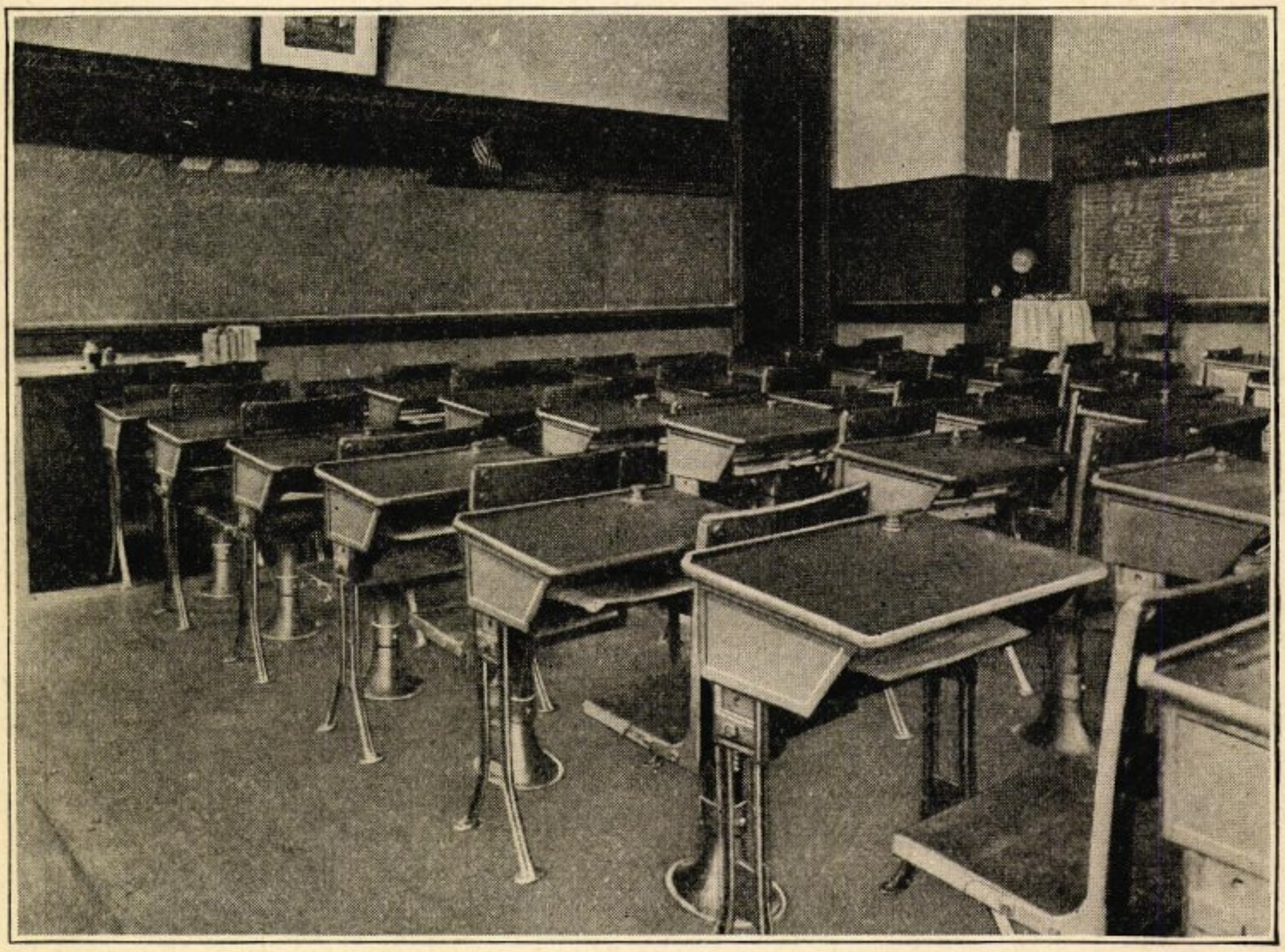


FIG. 6. A Good Type of Seat and Desk

This shows a type of seat and desk which is adjustable. Either the seat or the desk can be adjusted as to height with very little difficulty. The pedestals are so designed as to leave a minimum space upon which dust may collect. The floor may be kept clean with little difficulty

rather serious. However, the remedy must be in simplifying and improving the mechanics of adjustment rather than in resorting to the old unadjustable desk.

Adjusting desks to pupils. One of the first tasks which confront the teacher in arranging for the year's work is seeing that each pupil is properly supplied with a suitable desk and seat. If desks and seats are adjustable, the matter will not give much

trouble, for it is then only a matter of calling in a janitor and, with the child present, fitting the desk and seat to his measurement. If the seats are not adjustable and are all of uniform size, there are, of course, no changes to be made.

An important consideration in fitting the desk and seat to the pupil is the height of the seat from the floor. This should be such that when the child's feet are resting squarely upon the

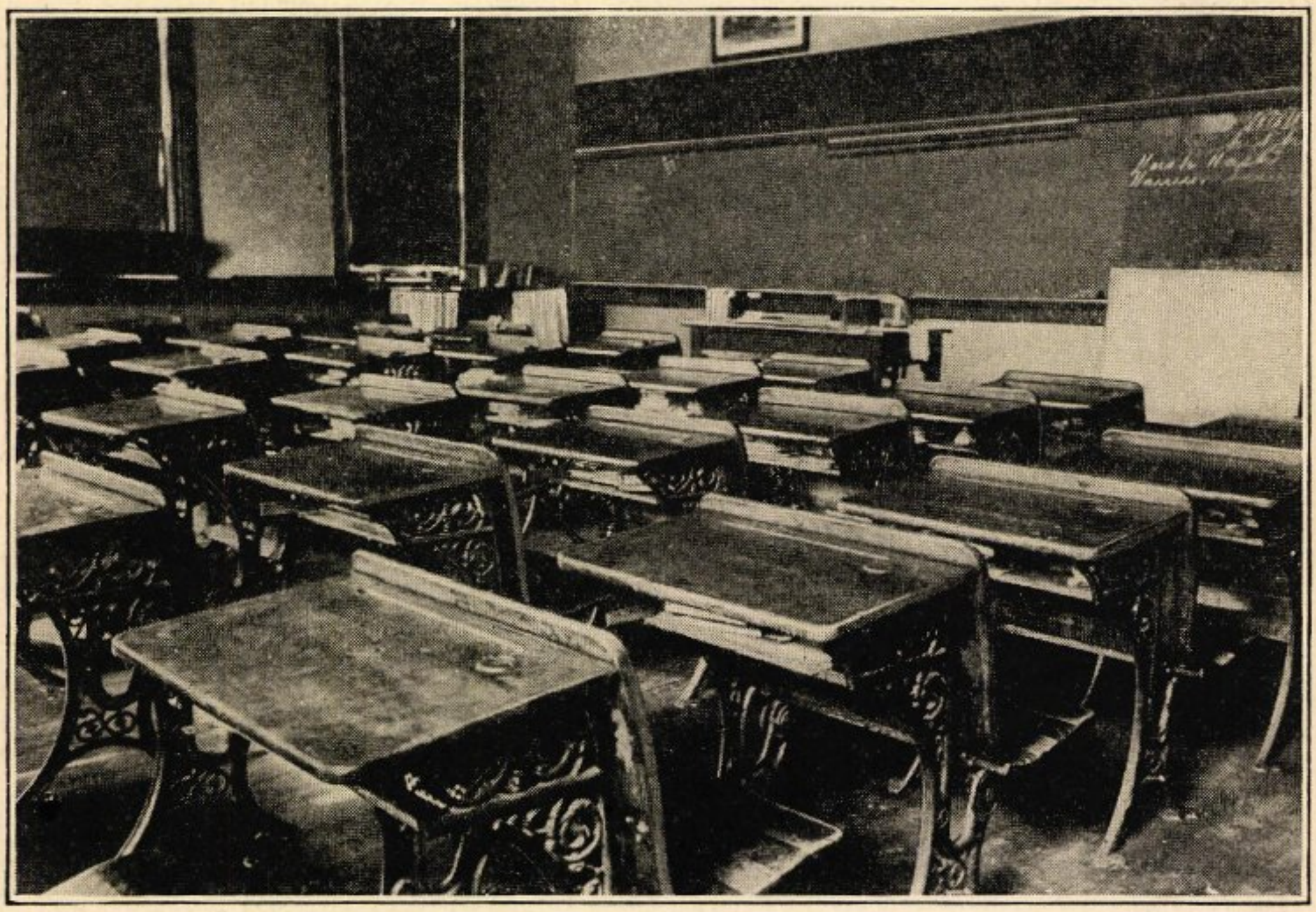


FIG. 7. A Poor Type of Seat and Desk

This shows a type of seat and desk which is nonadjustable and which has the added bad feature of being a dust trap. The scroll design of the desk pedestals, or standards, affords recesses into which dust can collect and from which it is difficult to remove it. It is almost impossible to keep such seats in a sanatory condition

floor the thigh bone is parallel to the floor. The thighs should not be raised from the seat. The height of the desk top should be such that the forearms may be rested easily and naturally upon it, as is necessary in writing. As regards the distance between the seat and the desk, the desk should overlap the seat about two inches. This is called a minus distance of two inches between seat and desk. Under no condition should this dis-

tance be plus; that is, so that if a vertical line be dropped from the rear edge of the desk top and also from the front edge of the seat to the floor there will be a space between them not covered by desk top or seat. Should such a condition obtain, it would result in a cramping of the abdominal viscera and of the heart and lungs. Continued working in this position causes the neck muscles to tire and the head to lower under the pull of gravity. This will bring the book too near the eyes, a condition conducive to myopia, or shortsightedness.

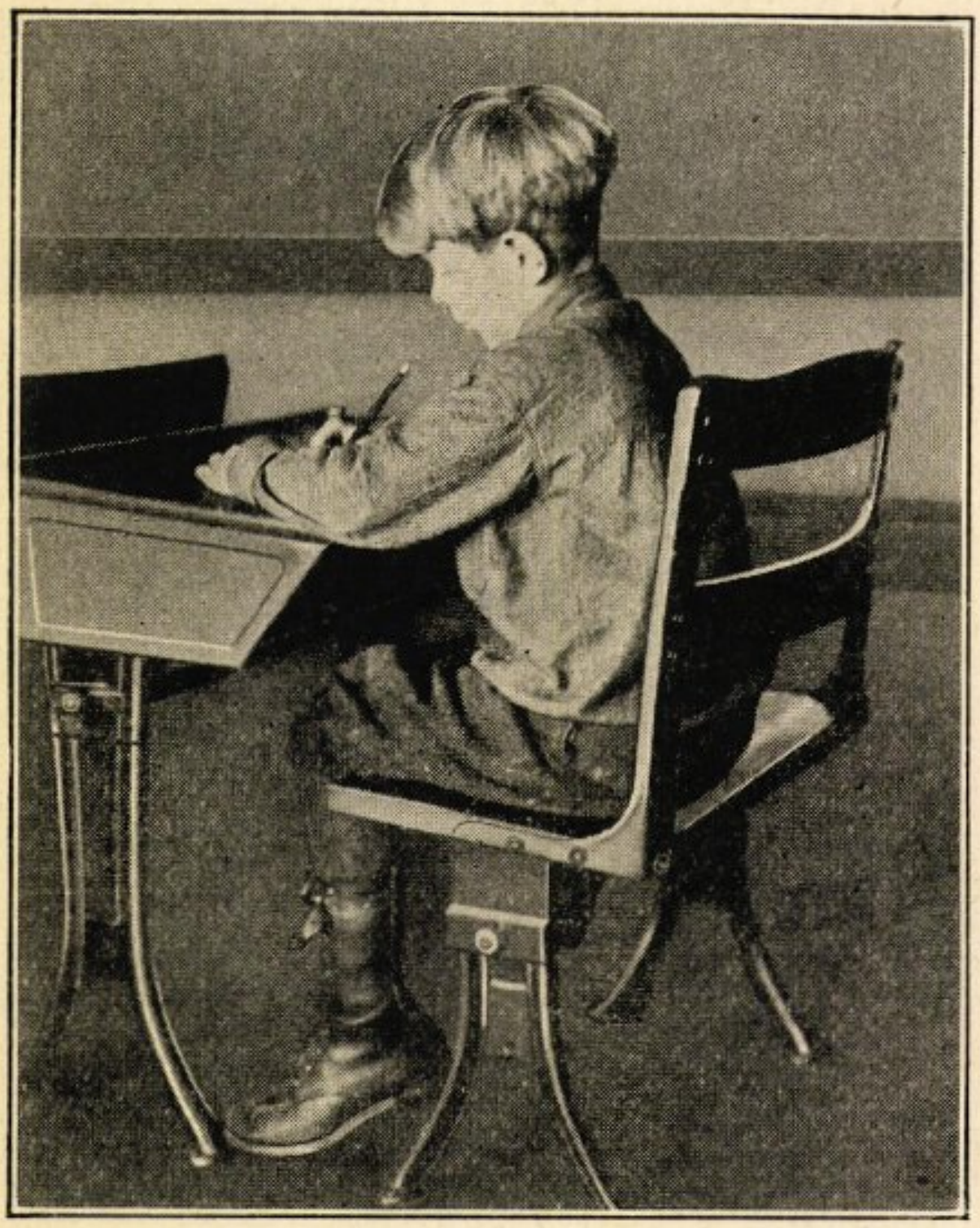


FIG. 8. A Poorly Adjusted Seat and Desk

This seat and desk are too large for the child. His feet do not reach the floor; his back is not properly supported; his forearms are so raised that he is under a strain; and his torso is bent forward in an effort to reach the desk, thus cramping the abdominal viscera

The top of the desk should slant at an angle of about fifteen degrees. The desk top should contain a pencil groove. It would be an improvement also if the desk lid were adjustable for at least a minus distance of four inches. The desk should contain a commodious receptacle for the needed books, papers, etc.; this may be placed underneath the lid or beneath the seat. It should be easily accessible but so placed as not to interfere with the pupil's movements while he is engaged in ordinary schoolroom activity. The seat should be concave, with the lowest part where the pelvic bones rest, and should be about two thirds as long as the thighs and little wider; greater width may tempt the pupil into unhygienic postures. Its

back should be high enough to support the lower part of the shoulder blades and so curved as to support the small of the back.

Movable versus immovable seats and desks. Regarding the question as to whether the desks and chairs should be stationary or movable, there is good argument both ways. H. E. Bennett, in an article entitled "Requirements for Good School Seating" (in *Elementary School Journal*, Vol. XXIII, pp. 203–214), makes the following points:



FIG. 9. A Well-Adjusted Seat and Desk

This seat and desk fit the child properly. His feet rest squarely upon the floor; his thigh bones are parallel to the floor; his back is properly supported; his forearms rest easily and naturally upon the top of the desk; and the position of his torso is such that there is no cramping of the abdominal viscera

The greatest step forward in desk construction has been the introduction of the movable chair desks. Several types are now on the market. The advantages of these may be summarized as follows:

1. Each desk is adjusted to its own chair rather than to the one in front, with obvious advantages otherwise possible only to separate seats and desks.

2. Floors are not defaced and rendered unsanitary by hundreds of screw holes (from 360 to more than 1000 in a room).

3. Floors are more easily and perfectly cleaned.

4. The difficulty of fitting pupils by adjusting or assorting the seats in a room is avoided by the readiness with which the chairs may be interchanged from room to room. The need for "adjustable furniture" may be entirely obviated by the use of assorted sizes of movable desks.

5. The problem of lighting, which can be only partially solved by the architect, is met by the ease with which pupils may turn their seats and move them out of the direct sunlight or nearer to the windows as occasion may require.

6. Pupils are readily separated for instruction in distinct groups—a plan of work insisted on in modern school management.

7. Pupils may be seated in any part of the room according to the teacher's discretion and without regard to size. This is a point which is appreciated by even the most reactionary teachers.

8. The entire arrangement of the room may be changed in a moment. The pupils may be massed at the front to observe demonstrations by the teacher, or they may be arranged in a circle, or, with seats pushed against the wall, the floor may be cleared for games, calisthenics, dramatizations, etc. This should result in an enormous saving in progressive school construction, since any room may be quickly converted into a playroom, social center, dancing-room, etc.

9. The seats may be removed from the room entirely, leaving it available for community-center work of any sort.

10. Grades are readily interchangeable among the rooms when this may be desirable for administrative reasons.

Mr. Bennett discusses the objections as follows:

Some objections raised to movable desks are that children are tempted to move them too much, that lines and aisles are not kept straight, that they are less durable, that they are easily overturned, spilling ink, books, and even children on the floor, and that in case of panic the falling seats would increase the danger. The first and second are unimportant, easily controlled by the right kind of discipline, and may be advanced as excellent arguments for movable seats in that they offer opportunity for right training for home and life. Children need the chance to learn to keep their chairs in whatever order is desirable without being screwed down. The last three objections are matters of construction which must be remedied. Movable seats can and should have the stability of a substantial table. They should be so constructed that no movement of the child in the seat and no downward pressure on the desk can possibly overturn it.

The teacher's desk. The location and construction of the teacher's desk is a matter of importance, but what is desirable in this respect depends much upon the nature of the work.

Many teachers prefer to have their desks in the rear of the room, the teacher coming forward to conduct classes. There are disciplinary advantages in this arrangement during the study periods. Then, too, it gives the room the atmosphere of a place in which to work, rather than merely a place in which to recite. There is nothing about the situation which tends to set the

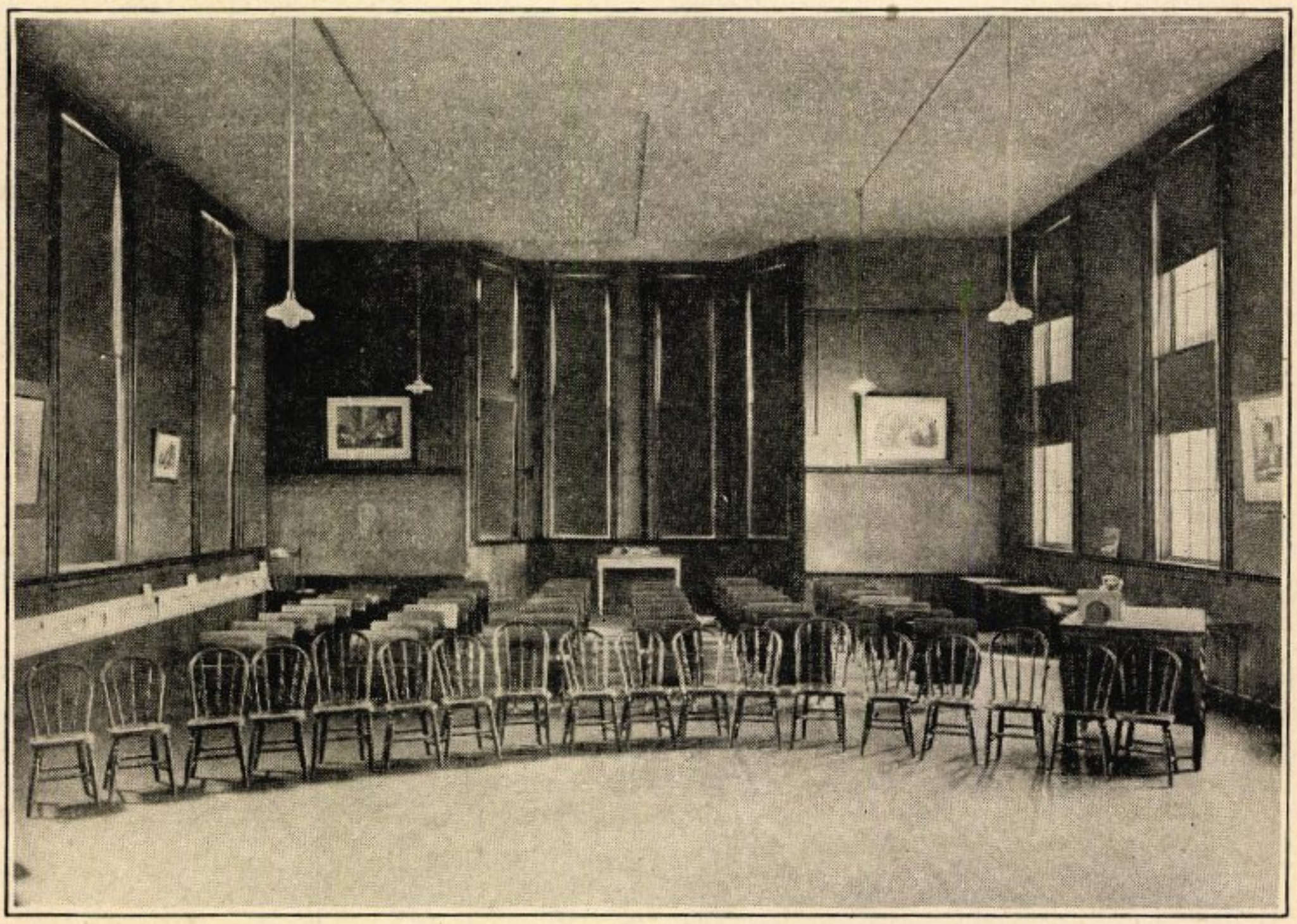


FIG. 10. A Poorly Placed Blackboard

This shows a room in which the only blackboard space is located in the rear of the room. Notice the effect of cross lighting on the board at the right

teacher apart from the group. It at least symbolizes his task of working with the pupils in their mastery of problems in contrast with that of merely hearing recitations. Moreover, pupils at work can be observed better, for it is more difficult for them to watch the teacher while they are planning mischief.

The teacher's desk should be large and should be provided with drawers so arranged and constructed that books and papers may be stored away conveniently. The desk with books and

papers heaped promiscuously upon it not only looks untidy but prevents a good view of the room.

Blackboards. The student should first observe the location and amount of blackboard space. This should extend around the three sides of the room not containing windows. The proper height from the floor will depend upon the grade of pupils

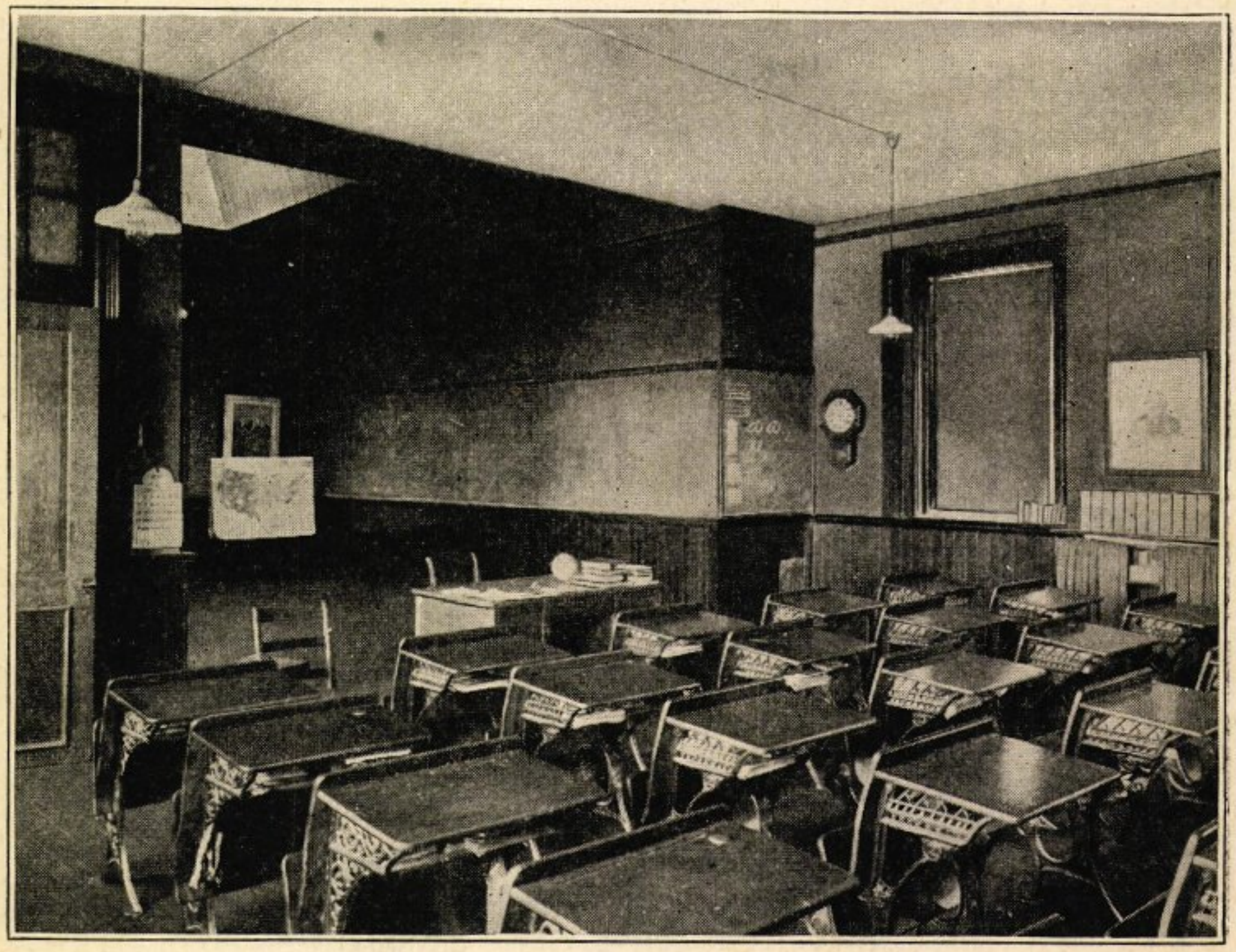


FIG. 11. A Blackboard of Little Use

This blackboard is so situated that it is of almost no use. It is poorly lighted, and the writing on it could not be read from many seats, even though it were well lighted

observed. Edward R. Shaw gives this height as 26 inches for primary children, 30 inches for intermediate-grade children, and 36 inches for grammar-grade children. Estimating upon this basis we can set the height for high-school pupils at about 40 inches.

Slate is the most desirable of the blackboard materials. It is not injured by washing and offers at all times an even surface.

The color of the board should be either a dull black or black with a very slight tint of green; dark brown and gray are undesirable.[1] As chalk dust is a possible source of physical ills its danger should be minimized by having a deep trough, covered with woven wire, along the bottom of the board. This screen should be placed on hinges so that frequent cleaning of the trough is possible.

GUIDE TO OBSERVATION AND REPORT

Desks and Chairs

1. Do pupils have single desks, or are there two at a desk?

2. Are desks and chairs movable or stationary?

3. Are both desks and chairs adjustable? If all are not adjustable, what percentage are?

4. Do desks or chairs contain adequate receptacles for books, papers, etc.?

5. Are both desks and chairs strongly constructed and well fastened to the floor?

6. Do the standards supporting desks and chairs admit of sweeping easily?

7. Are desks and chairs well constructed with a view to dust; that is, are they so constructed as to have as little surface as possible? (Many chairs and desks are dust traps.)

8. Can the seat be raised and lowered? (This is necessary both for sweeping and for getting in and out of the seats.)

9. Estimate the average amount of horizontal distance between the rear edge of the desk lids and the front edge of the seats. (This should be about two inches of minus distance, or, in other words, about two inches of overlapping.)

[1] In general the most satisfactory color is a dull black. A very slight tint of green renders the blackboard a little more satisfactory and a little less conspicuous, but it is so easy to use too much green that one hesitates to recommend it. A decidedly green blackboard is very trying on the eyes and disturbing to the sensibilities.—*United States Bureau of Education Bulletin No. 12*, 1914, p. 50.

10. Are seats and desk lids of proper height for the pupils occupying them? Note any exception to this requirement.

11. Estimate the slant of the desk lid.

12. Does the desk lid contain a pencil groove?

13. Is the color of the desk lid such as to contrast well with the material worked upon? (The color should be dark. A bright background decreases the effectiveness of the illumination of the work itself.[1])

Arrangement of Chairs

1. Are the desks and chairs so placed that as a body they are all as near the light as possible, giving due consideration to aisle and board space?

2. Are they so arranged that the principles of lighting discussed in Lesson III are complied with?

3. Do they face the long or the short side of the room?

4. Is aisle space conserved with a view to making as much room as possible between the body of seats and the blackboards?

5. Is the teacher's desk so placed and constructed that it answers satisfactorily the requirements of his work?

Blackboards

1. Are blackboards so placed that they can be seen without facing a light?

2. Can writing on any part of the blackboard be seen from any part of the room?

3. Is all available space around the room (omitting side on which windows are placed) used for blackboards?

4. Are blackboards the proper distance from the floor? (For high-school students about 40 inches.)

5. Is the trough at the bottom of the board covered with woven wire so as to aid in preventing the circulation of chalk dust?

6. What is the color of the board?

7. Of what material is the board?

[1] This is contrary to the recommendation of Doctor Myles Standish, who says that the woodwork of the room and the desks should be light in color. See Newmayer, Medical and Sanitary Inspection of Schools, p. 117.

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The following is a sample report of an observation accompanying Lesson V:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Fifth-Grade History

At this observation particular attention was paid to the seating arrangements and blackboard facilities of the room. The windows are on the south side of the room, and the pupils seated on the north side of the room do not receive as much light as they should. However, the electric lights are placed so as to furnish equal light to all. The seats are arranged in five rows with six seats in a row and face the short side of the room. The aisles are as wide as they could be and leave space between the body of seats and the blackboard. But the space between the body of seats and the blackboard is not wide enough to allow the teacher to pass behind the students easily when they are at the board. The teacher's desk is well constructed and arranged. There are large drawers on either side in which books and papers can be placed. The children's desks are not adjustable. They certainly should be, as the size of the pupils in this grade varies considerably. For instance, there is one very

small boy in the class which I am observing whose seat is entirely too high for him. There is plenty of room in the desks for books and papers, thereby leaving the desk free on top for class work. The seats can be raised so as to enable the janitor to sweep thoroughly under them.

The blackboards are so placed that they can be seen without facing the light. Writing on the board can be seen from any part of the room if the letters and figures are of medium size. There are three walls used for blackboards. The windows are on the fourth side. The blackboards are of black slate and are placed about thirty inches from the floor. There is no covering of woven wire on the trough at the bottom of the board to aid in preventing the circulation of chalk dust. I think such an arrangement would be very advisable in any room where a great deal of work is done at the board. The pupils' health would be greatly safeguarded as well as that of the teacher.

LESSON VI

Aim. *To become conscious of the æsthetic needs of the classroom and to develop ideals with respect to them.*

Training in neatness and in æsthetic experience in general an important part of the child's total education. Training in neatness and in æsthetic experience in general is as truly a part of the total education of the child as are reading, writing, arithmetic, and other fundamentals. It is a part of our system of reactions which either fit or unfit us for the business of living. Hence the teacher must be continually watchful lest undesirable reactions in these fields be the outcome of school training. Our method is clear. We learn to be neat by being neat and hearing neatness applauded; we learn to like good music by hearing good music, and to appreciate the beautiful in art by observing it. Therefore it is important that the schoolroom floor be kept free from paper, that the books be placed neatly in the desks, that the pictures on the wall be well selected and artistically arranged.

Ideals alone insufficient to produce reactions leading to neatness. If you have ever observed a badly trained individual making efforts to be neat you have no doubt wondered why that which seemed the result of so little effort on the part of a few caused so much effort on the part of others. Let us attempt to locate at least a part of the difficulty. Take as an example an untidy man working at a desk in his office. Papers are littered about. The contents of the desk drawers are topsy-turvy. The wastebasket beside him has been partially emptied and its contents scattered over the floor. He has been looking for lost papers. He is sitting back in his swivel chair, reflecting, when

his eyes fall upon the neat desk of the neighbor who is working beside him. The comparison with his own desk brings the ever-recurring determination to keep it looking like those about him. With this thought in mind he sets to work putting the waste paper back into the basket, filing letters, and arranging the articles upon the desk and within the drawers.

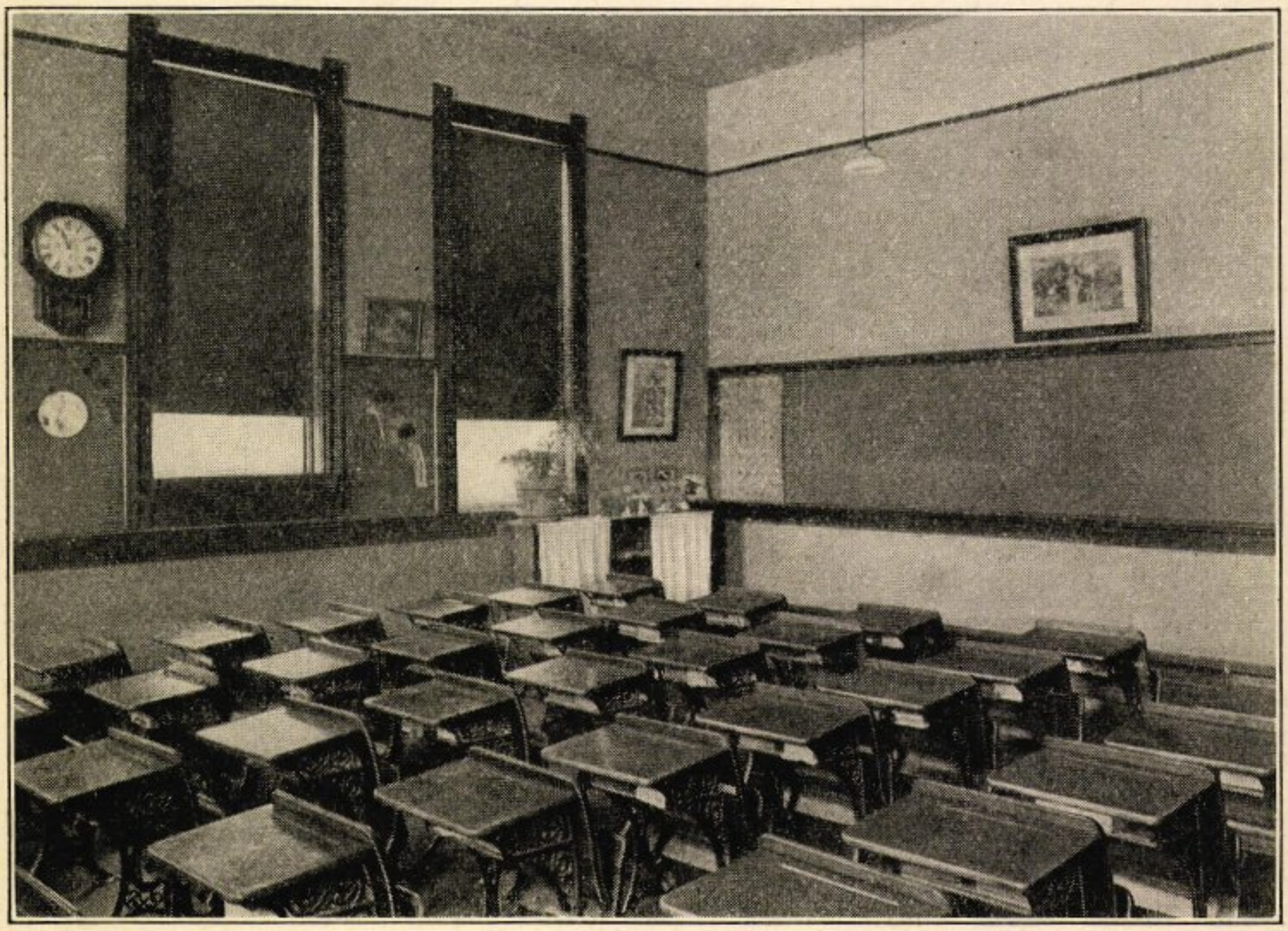


FIG. 12. A Tidy Classroom

The pupils have left everything in perfect order

Once all is in order he compliments himself on having as neat a desk as there is in the office and goes about the regular routine of work. But in doing so he needs papers that he has carefully put away. These are brought forth. Others are needed, and in his haste he forgets to put back those which he has just used and with which he is through. In short, he soon finds that his desk is as badly littered as before. Once more he thinks of neatness, but this time gives up in despair.

Now what is the difference between him and his neighbor whose desk is always neat? He has ideals of neatness which are, perhaps, stronger than those of his neighbor. He really desires to be neat and thinks of neatness oftener than his neighbor does. But the reactions that produce neatness in his case are on the conscious level. He is a busy man; his mind must

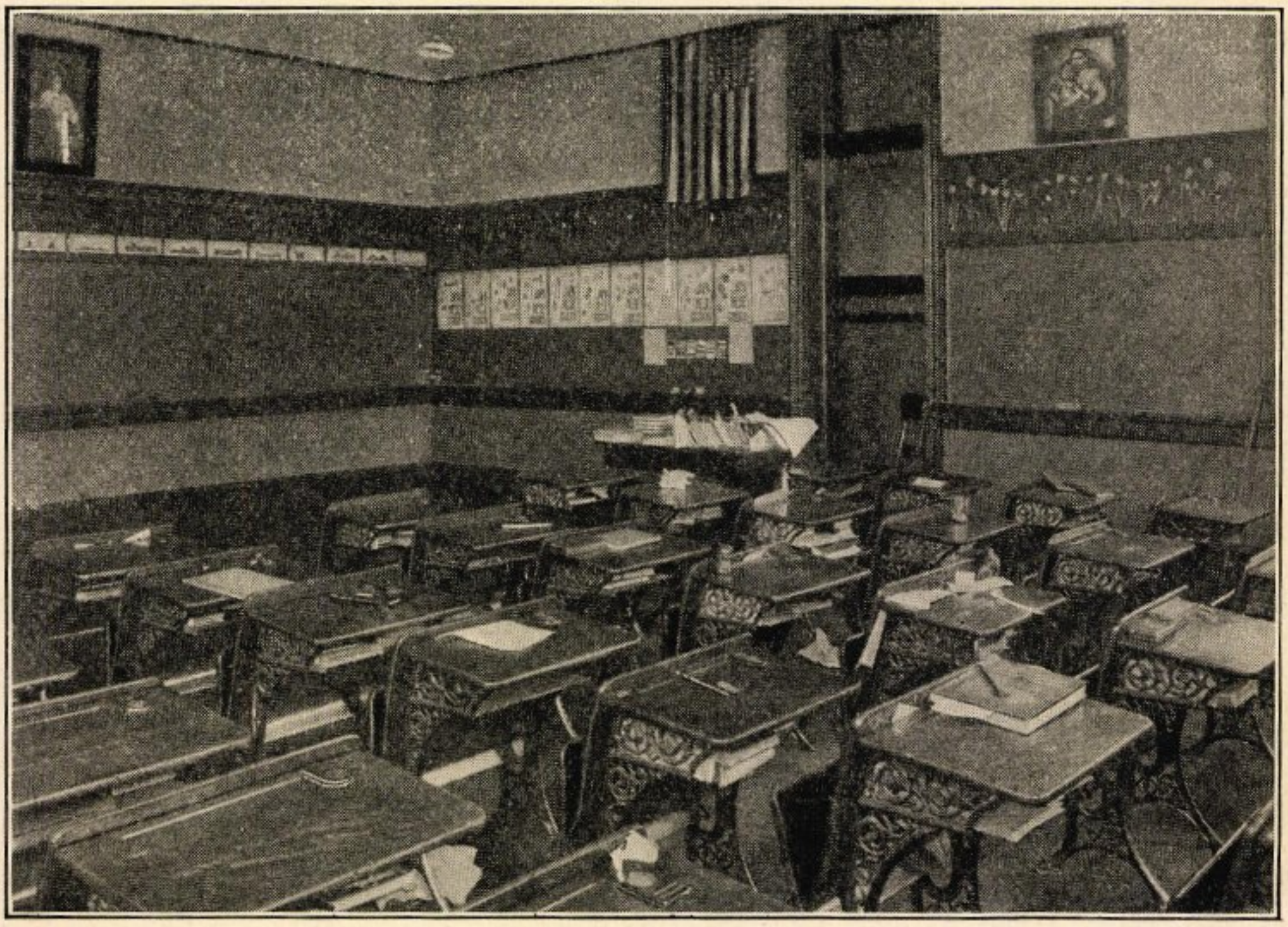


FIG. 13. An Untidy Classroom

The pupils have left for the day without properly replacing books, pens, tablets, etc. Untidy habits which will seriously handicap the pupils in later life are being encouraged

deal with such affairs as consume his mental efforts; he cannot be continually thinking of neatness; and as a result he reaps the reward of one in whom reactions leading to neatness are entirely upon the conscious level. Not so with his neighbor. He needs to make no conscious effort, for his early training has been such that his more or less unconscious reactions take care of the matter.

Neatness a matter of being neat in innumerable situations. Another characteristic of neatness is that its basis lies in innumerable specific reactions. Observing neatness in one situation gives but little indication of a general tendency toward neatness. A study carried out a few years ago showed that training in neatness in the written work of one subject gave no indication of improved neatness in the written work of another subject. Neatness in language work does not assure one of neatness in arithmetic. Neatness in the matter of hanging up one's wraps may be accompanied by lack of neatness in the matter of one's personal appearance. I have observed a peculiar neatness reaction in myself. I am greatly annoyed by an untidy classroom floor, so much so that, in the absence of a janitor, I have more than once gone about the room picking up scraps of paper before attempting to conduct my class. In looking for the source of this peculiar annoyance (for I am not generally observing of, or easily annoyed by, my environment) I recall that in the early years of my teaching experience in a one-room country school I had the task every evening of sweeping the floor. It seems that this experience had the effect of developing my neatness reaction with respect to classroom floors out of all proportion to other types of neatness reactions. It may be said that, while there is such a thing as a general ideal of neatness, one becomes neat in general by building up specific reaction patterns leading to neatness in innumerable specific situations.

Neatness but one phase of æsthetic training. A love for that which possesses orderliness, harmony, and beauty includes more than the neatness phase of training. Neatness is a part of one's æsthetic training in that it is concerned with the fitness of things. Of a higher order, but perhaps psychologically of the same nature, is response to the beautiful in nature, art, and literature. We learn to appreciate and enjoy fitness or harmony in color or tone in the same way that we learn to experience satisfaction in the orderliness of the physical things around

us. There is that in our nature which makes these satisfying responses possible.

Basis for æsthetic training in nature of man. Were I to draw a square 5 × 5 upon the board and place beside it an oblong of dimensions 3 × 5, the reader, upon request as to which was the more pleasing to look upon, without doubt would respond that the latter pleased him more. This cannot be explained. The difference may lie in the eye movements necessary to the complete visualization of the figures. However that may be, the fact remains. So it is, also, in the harmony of tones and colors. The basis for the pleasing and beautiful lies within us.

Love of the beautiful an ultimate in life. Samuel Chester Parker,[1] in his writings and lectures, attached considerable importance to enjoyment as an end of education, as the following quotation will indicate:

> The proper enjoyment of one's leisure time deserves large consideration in a scheme of education for persons that do not have to spend all of their time in a struggle for existence. Certainly for a large part of any well-civilized community the problem presented by training for leisure is almost as pressing as the problem of training for efficiency. For example, consider the difficulties presented in this connection in such a large city as Chicago, in directing the leisure activities of boys and girls between fifteen and twenty-one years of age. Moreover, as we regard the successful effort of labor unions and publicists to get the working hours of employees reduced, it almost suggests that the reason for desiring efficiency is to secure leisure; that the latter is the final purpose toward which efficiency is directed.

> Any survey of life's values will reveal the fact that most of the objects for which we strive are in and of themselves of no worth. Many of them may be grouped under economic efficiency, which means, in the last analysis, the conquering of the elements that man may survive. Others may be grouped under civic-social efficiency, which means that men must have the ad-

[1] Methods of Teaching in High Schools, pp. 17–18. Copyright by Ginn and Company.

vantage of concerted effort in conquering environment. The latter is but a means to the former, which itself must be a means to a more worthy end, for surely otherwise man would have no more justification for his efforts than the lower animals. The remaining activities of men may be grouped under cultural efficiency, and these justify life and all man's effort to attain them. Without them nothing would be worth the effort. They are the content for which all others are but form and structure. Hence an appreciation of the beautiful as a type of cultural reaction becomes very important. It is one of the ultimately valuable abilities for which children can be trained.

Love of the beautiful but one type of enjoyment. There are many forms of enjoyment; and though they may be ranked as to degrees of worth, all in proper amounts which in no way injure others or ourselves are surely good. To enjoy a good meal, to feel the thrill of a game, to listen to or render a piece of music, to appreciate the symmetry and beauty of a work of art, to sit beneath evening skies and contemplate the vastness of the heavens, are ascending values in appreciation and enjoyment.

Love of the beautiful one of life's richest sources of enjoyment. As has been indicated above, there are degrees of appreciation and enjoyment; but love of the beautiful ranks high among them, surpassed, perhaps, only by love of wisdom and understanding. Like most real values it costs little or nothing and takes nothing from the world's store of goods. Its possession by one does not mean its denial to another. Nature abounds with beauty—mountains, plains, valleys, lakes, and sunsets. They are before us; we need only observe and enjoy. However, this vast storehouse containing treasures of enjoyment needs unlocking for most of us.

Love of the beautiful an outcome of training. At this point I recall early associations with a student of art who at that time annoyed me with many references to the beauties of sunsets. For me a sunset was nothing more nor less than the sun's

going down. Those associations had their effect, for sunsets since then have been a source of real pleasure. So with other types of beauty: most of us must have our attention called to them or they forever escape our notice. Then, too, we must experience them again and again. Beauty may have an objective basis, but our appreciation of the beautiful is highly subjective and must grow through experiencing the beautiful.

School buildings and grounds should be as attractive as the best-kept homes. The days of the little red schoolhouse are over, and it is well that this is so. Children may learn to read and write in a place destitute of all beauty, but such a place is totally unsuited to the purpose of teaching pupils to live through living or to appreciate the beautiful through experiencing it. The architecture of a school building should conform to principles of art; pictures hung within should be selected with a view to developing taste in the pupil; the school yard should be well kept. The teacher and pupils are not helpless in the matter of beautifying buildings and grounds even though a thoughtless community has placed upon them the handicap of an unattractive building. Good pictures can be obtained, the yard may be cleaned, and other improvements made.

Beautifying schoolroom and grounds should be a schoolroom project. It is not enough that the schoolroom and grounds be made beautiful; the beautifying of the premises should be utilized as material with which to give interest and experience in making things beautiful. Let the pupils participate in the selection of pictures and the ways and means of obtaining them. The experience of organizing themselves for the purpose of cleaning the yard will be in itself the finest sort of educational activity. Pupils should make judgments relative to the placing of pictures. Committees may be appointed by the pupils to keep certain vases full of flowers, others to care for flower beds in the yard. In this way the pupils may learn to select and arrange flowers with a view to principles of beauty and to take interest

and pride in doing so. The teacher, who has more experience than the rest, will act as a member of the group. He will advise when called upon and when necessary will suggest improvements. It will often be necessary for him to initiate an undertaking, but as rapidly as is consistent with progress he should allow the pupils to take the responsibility themselves.

Pictures should be suitable to the age of the pupils. The pictures selected should not be above the interpretation level of the child. Pictures of little children, of animals with which children are familiar, etc. are suitable to the primary grades. The following list is representative of those suitable:

Feeding her Birds (Millet)
Four Kittens (T. Adam)
The First Step (Millet)
Can't you Talk? (Holmes)

The basis of the above selection lies in the fact that little children are interested in things in relation to themselves. An incident is told which illustrates this truth. A lamb was brought into the presence of primary children for the purpose of nature study. The questions asked by the children were about as follows: "Where can I get one?" "Will he bite me?" "Can I take him home?" No interest was taken in the purpose of his wool or the set of his ears.

The following is a suggestive list of pictures suitable to intermediate and grammar-school grades:

The Angelus (Millet)
The Gleaners (Millet)
Song of the Lark (Breton)
Return to the Farm (Troyon)

The custom is generally followed in high schools of placing in the various classrooms appropriate portraits of famous leaders of thought and action, for the purpose of giving a proper atmosphere for the work. A picture of Euclid is commonly found in

rooms in which mathematics is taught; of Agassiz, Huxley, or Tyndall in rooms in which biology is taught; and of Washington, Lincoln, Napoleon, or Cromwell in rooms in which history is taught. This is desirable, as those pictures lend distinctiveness to the atmosphere of the various rooms. The assembly room,

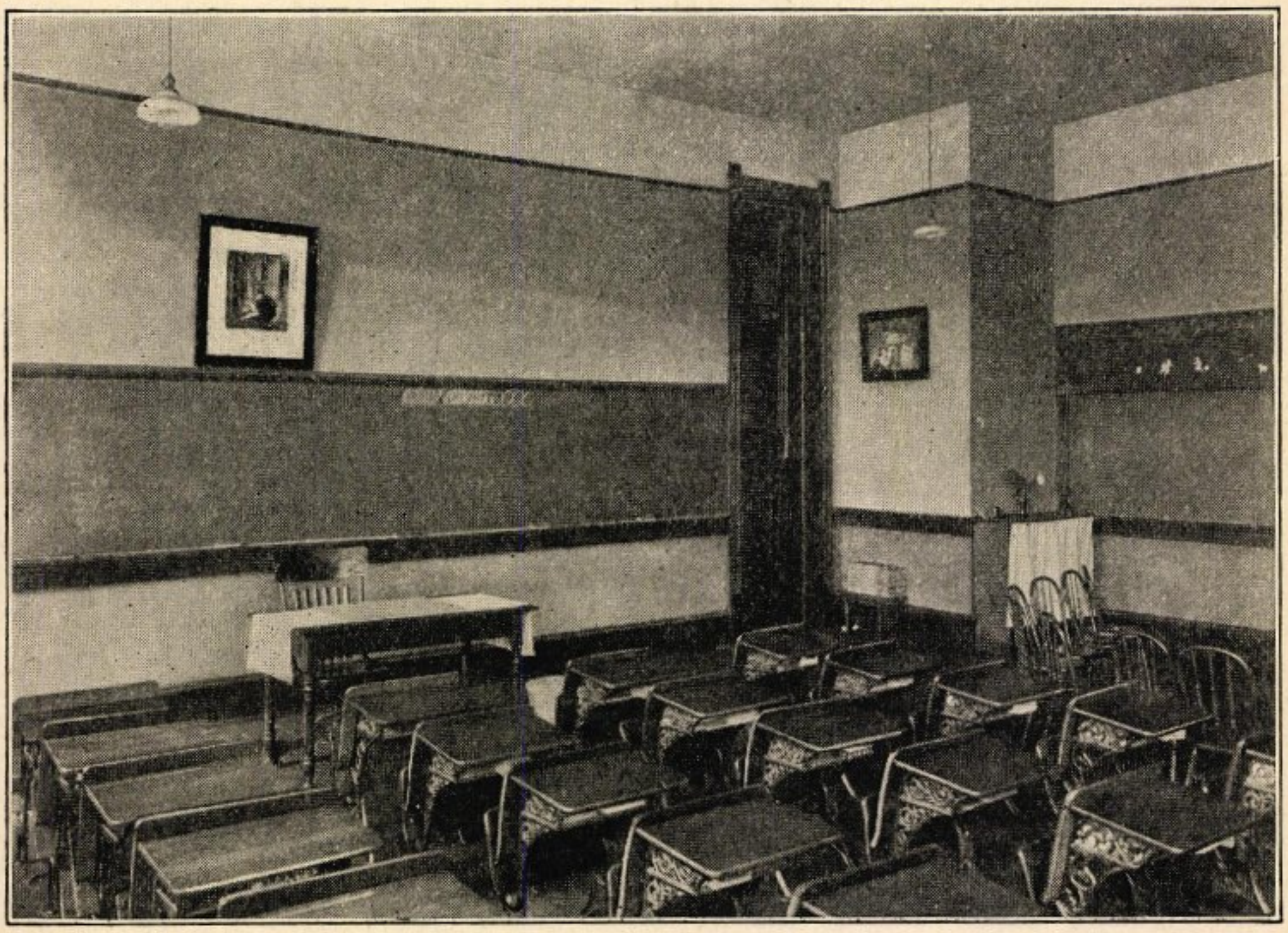


FIG. 14. Suitable Pictures Well Displayed

The subject matter of these pictures is suited to the age of the pupils, and the pictures are properly hung and spaced

however, whether upper-grade or high-school, should contain reproductions of the best masterpieces in painting and sculpture.

Children should be aided in interpreting pictures. A teacher in commenting upon the interpretation of pictures to pupils said, "As a child my uncle, who cared much for the 'Song of the Lark,' in calling my attention to the picture told me its meaning. He first told me the story as follows: 'A girl going to her work early in the morning is suddenly attracted by the song of a lark. She pauses to listen.' He then called my attention to

the expression upon the girl's face, to the harmony of coloring, and to fine points of the picture in general. Since then I have always cared much for the 'Song of the Lark.'" There is a lesson in this for teachers. It is not sufficient that beautiful pictures hang in the room or that classical music be rendered before the class. The taste will develop much more rapidly if

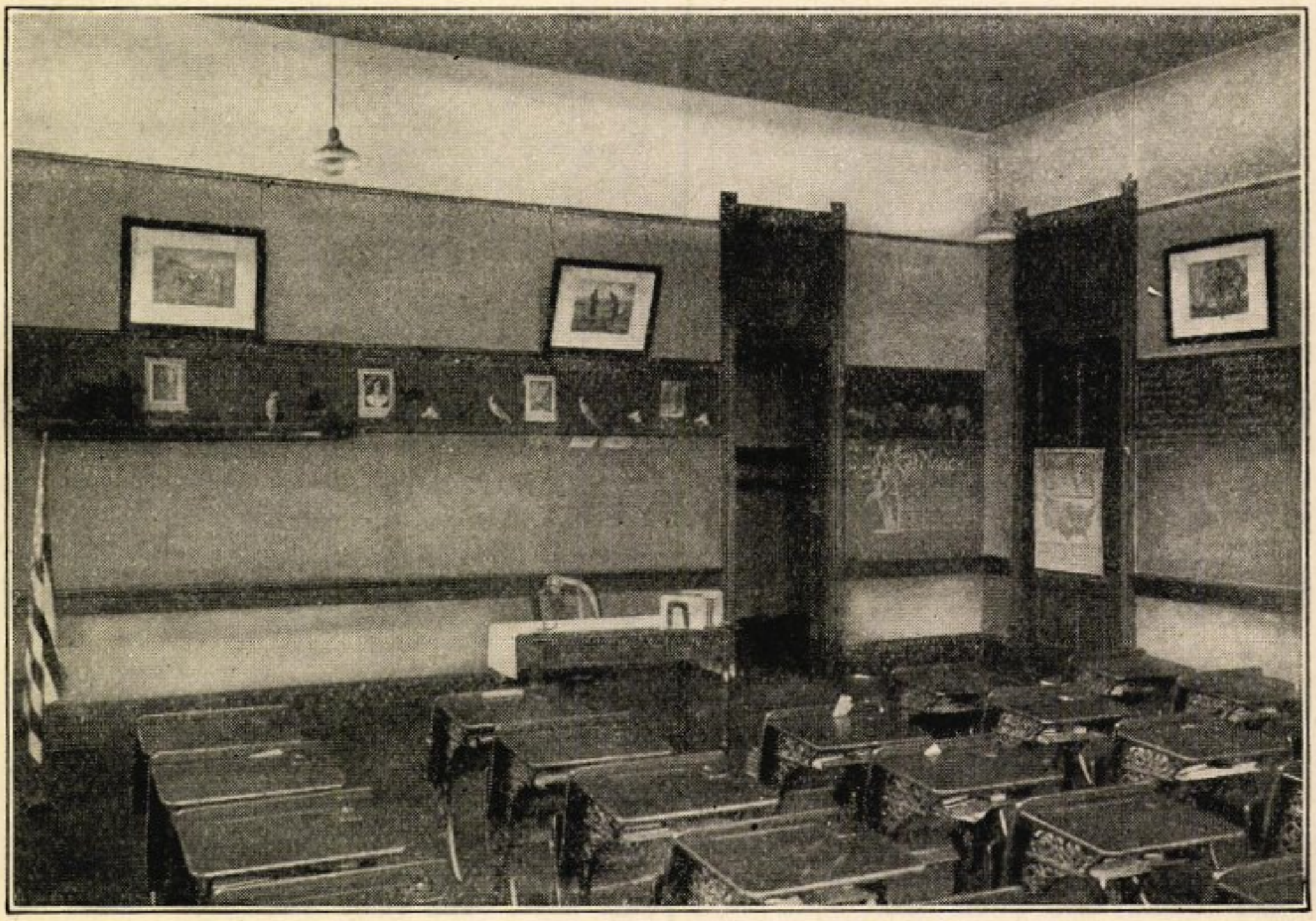


FIG. 15. Inappropriate Pictures

The subject matter of these pictures is more suited to the grammar than to the primary grades. There are too many pictures, and they are neither evenly hung nor properly spaced

the teacher aids in interpreting the artist. It might be well to use morning exercises once in a while for the purpose of interpreting pictures in the rooms. At times it will be possible to borrow pictures, which may be studied and allowed to hang before the pupils for a few days. This is good practice, as, if properly carried out, it will arouse a wider interest in pictures than would otherwise be possible and at the same time will strengthen the pupils' appreciation of many pictures.

Teacher and pupils must guard against overdecoration of the schoolroom. The hanging of one picture often means that another must come down. A schoolroom is not an art gallery. It is an easy matter to overdecorate. Then, too, pictures must be selected with respect to the amount of wall space available for the picture. A large picture in a small space or a small picture in a large space may spoil the general effect of the picture as a schoolroom decoration.

GUIDE TO OBSERVATION AND REPORT

1. Is the floor clean and free from paper?
2. Is the teacher's desk tidy?
3. Are the pupils' desks tidy?
4. Are the desks free from ink stains, knife marks, etc.?
5. Are the walls neatly decorated or are they dirty?
6. Are the pictures appropriate?
7. Are the pictures evenly hung and well distributed over the walls?
8. If there is a phonograph in the room, examine the records to determine their quality.
9. Are pupils and teacher neatly dressed?
10. Is the school building pleasing to look upon from the outside?
11. Is the yard well kept, free from sticks, the grass cut, the fence painted and well cared for? What is the condition of flower beds etc.?
12. Are there projects going on in which pupils are taking the initiative in beautifying the room, the buildings, or the grounds?

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The following is a sample report of an observation accompanying Lesson VI:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9A

During this period special attention was given to the æsthetic aspects of the classroom. The floor was fairly clean; however, chalk dust could be seen around the edges, and small scraps of paper lay in the aisles. But the condition of the floor was not especially offensive, considering the fact that the class which I was observing was a fifth-hour class, which is the last one for the day. If the pupils in the previous classes had been taught the importance of neatness, there might have been no paper on the floor. The teacher's desk was tidy but rather dusty. With the windows open all day it would be rather difficult to keep anything dusted. The teacher keeps on his desk a large blotter, a card with the pupils' names, and the class textbook. Most of the pupils' desks are neat enough on top but are filled inside with wads of yellow paper. This condition of the desks makes an unpleasant effect upon anyone sitting at the back of the room.

The pupils should be made to throw their waste paper in the basket and keep the inside of the desks clear, so their books could be placed there. There are no ink stains on the desks, probably due to the fact that the pupils use pencils, and there are no inkwells in the desks. The tops of the desks are in good condition and

seem to be kept that way. The walls are very clean and look as if they had just been decorated before the school term began this fall. There are no pictures in the room.

On the whole, the room is well cared for, makes a good appearance, and gives one the impression that the children evidently get some training in neatness. The only fault is found in the untidiness of the inside of the desks. With a little training and attention to this fault, I believe it could be readily overcome.

The office, corridors, and auditorium are clean and newly decorated. A large sculptured model of a piece of Greek statuary is placed at the head of the front stairs on the first landing and does much to beautify the main entrance to the building. Reproductions of many of the best paintings are hung at properly spaced intervals throughout the corridors. These were donated by various graduating classes, a fact which gives the pupils added interest in them. The auditorium presents a pleasing appearance. It is well equipped and its acoustic qualities are good. This makes it possible for the pupils to take full advantage of musical entertainments and to put on plays and musicales of their own.

The architecture of the building in general is pleasing from either an internal or external view. The building occupies an entire city block of ground and is surrounded by well-kept lawns.

LESSON VII

Aim. *To appreciate characteristics of the teacher which have a bearing upon his relation to the pupils and to form ideals relative to a teacher's dress, manners, voice, poise, knowledge of subject matter, etc.*

Perhaps the most important determinant in the whole schoolroom situation is the teacher himself. His dress and behavior either set new standards or modify for good or ill those already formed by the pupils. The teacher whose dress and habits are correct is likely to be dimly conscious of the fact and, as a result, to be more self-possessed and at ease before his class. Furthermore, he is in better position to demand neatness on the part of the pupils.

Voice directly related to classroom atmosphere. The teacher with the high-pitched, rasping voice is almost certain to irritate the pupils, with the result that the room becomes noisy and disturbing. Bagley says, on this point:

> Probably superintendents and principals would generally agree that, next to inability to secure respectful obedience from pupils, most of the trouble in discipline has its source in the voice of the teacher. The temptation to speak to the children in a high-pitched, rasping voice is very hard to resist, especially when there is the least bit of noise or confusion in the classroom. As the teacher's voice becomes louder and louder, the tumult increases in like proportions, until finally one must shout in order to be heard. To one who tries, for the first time, the remedial measure of a low voice in such a situation, the result is a little less than astounding. As the teacher lowers his voice, the hubbub gradually dies away, and almost before one is conscious of the change, quiet and order have succeeded confusion and chaos.[1]

[1] W. C. Bagley, Classroom Management, pp. 101–102. Copyright by The Macmillan Company. Reprinted by permission.

Poise of teacher a factor in discipline. Let us consider the poise of the teacher with respect to his bearing upon the ideal schoolroom situation. It is difficult to say just what factors enter into good poise. Yet we must analyze the complex if we are to attempt to cultivate it, for it is only by improving in the unitary elements that improvement in the whole function can be made.

One of the most important components of poise is ability to control the emotions. The teacher who betrays emotions of anger, fear, extreme sympathy, and the like is apt to find the pupils deliberately contriving to obtain such expressions from him. The ability to sympathize, for example, must be in the background, for when displayed in its extreme form it is likely to repel many and unduly excite the feelings of others. Excitability in a teacher tends to give a schoolroom an atmosphere of tension, which is likely to produce similar reactions on the part of the pupils. Irritability likewise interferes with the normal functioning of the school activities and tends to produce the same condition in the pupils. The question of self-confidence also comes in for its share of consideration. The shy teacher who lacks self-confidence has a decided handicap. He does not do justice to his ability, and hence would fall short of his best work even though there were no observable effect upon the pupils. But the pupils *are* affected. They are inspired to confidence in a teacher partly through the teacher's confidence in himself. In other words, leadership is impossible where self-confidence is lacking.

One is too often inclined to say that these are inherited qualities and hence may be observed but not improved. This is doubtful. Granting that there is perhaps an instinctive basis for such reaction, there is evidence that modification is possible. The question is how. Psychology offers a suggestion. Look straight into the eyes of those with whom you are speaking and, even though it requires a great effort, go through the outward

manifestations of boldness of reaction and you may expect in time to find timidity vanishing. Control the outward reactions and the inner reactions or feelings will tend to conform.

The teacher should radiate enthusiasm. Does the teacher radiate enthusiasm or depression? While this matter is an important one, its control must be got at more indirectly. It is impossible for one with a dark outlook on life to create enthusiasm in those about him. The teacher should have those high professional ideals and ambitions which alone give zest to life. This attitude may be obtained by reading professional literature and attending teachers' conventions and by other ideal-giving activities.

Tact a factor in discipline. With respect to tact, much has been written which is likely to be misleading. The teacher should ever bear in mind that tact does not mean playing petty politics. The teacher whose purposes are high and who has the well-being of his pupils at heart is not likely to speak a harsh and cutting word; neither is he likely to neglect his duty toward the entire student body. His dealings with pupils are likely to be fair and impersonal. On the other hand, the teacher must weigh and consider his actions, so that there can be no misunderstanding of his intentions.

Health of teacher a factor in classroom. No teacher whose health is at low ebb can be at his best in the classroom. School work entails a drain upon the vital energy, and a goodly supply of vitality must be at hand in the morning if one is to go through the day performing effectively the strenuous tasks of the teacher. The writer recalls an instance of a superintendent of schools who discovered that one of his teachers was in the last stage of tuberculosis. She had been concealing the fact in order to finish the term of school. It is needless to say that her work was unsatisfactory from the standpoint of accomplishment; and, what was vastly more important, she had exposed thirty children to one of the most fatal maladies. Of

course, such a teacher should be asked to resign immediately. In cases of a generally weakened condition, healthful habits, such as right eating and plenty of sleep, are usually all that are needed to fit the teacher for his tasks.

Promptness of teacher in meeting and dismissing classes a factor in school morale. Promptness in meeting and dismissing classes not only saves time but enables the teacher with better grace to demand promptness of the pupils. Promptness is perhaps needed more in our day of coöperative undertakings than ever before. One man may delay the activity in a whole factory. This fact makes promptness one of the vital outcomes of education. Another important consideration is the fact that the teacher who appears five minutes late before his class of thirty-six has wasted three hours of pupil-time.

Teacher's knowledge of subject matter an important factor in determining effectiveness. Whereas in the past we have, without doubt, overemphasized the importance of the knowledge of subject matter as contrasted with the pedagogical side of the teaching process, there is at present danger lest we overlook its importance. There is a certain amount of learning which is of necessity concerned with facts; and the teacher must be in possession of the facts if he is to do his work adequately. Knowledge has the added virtue of lending confidence to the teacher in possession of it.

Intellectual honesty aids in creating wholesome teaching situation. "Bluffing" is sometimes resorted to by teachers whose knowledge is insufficient to meet the immediate demands of the class. This is very bad practice, for the pupils are almost certain to be misinformed and the bluffer is commonly discovered sooner or later. It has been the general experience of school men that an honest "I don't know" seldom imperils the prestige of the teacher. On the contrary, those who hear this once in a while are more likely to have confidence when the teacher says that so and so are the facts.

Ability to use English fluently and correctly a valuable asset. Since it is part of the teacher's task to make the pupils conscious of their errors in English and to give them the desire to speak correctly, it is of the greatest importance that the teacher himself set correct standards. Although one may learn correct usage from grammar, the speaking of good English is largely a matter of imitating what we have heard.

GUIDE TO OBSERVATION AND REPORT

1. Does the teacher's dress show good taste as to material, color, and style?

2. Neatness:

a. In personal appearance.

b. In blackboard work.

c. In the keeping of his desk.

3. Characteristics of voice:

a. High-pitched and rasping or low and soft.

b. Clear or mumbled.

4. Poise:

a. Does he display passion easily?

b. Is he readily excited?

c. Is he irritable?

d. Is he courageous or shy?

e. Does he look squarely into the eyes of those to whom he is speaking?

5. Does he radiate enthusiasm or depression?

6. Has he tact in dealing with the pupils? Give evidence.

7. Does he give evidence of good health?

a. Is he cheerful or gloomy?

b. Is he nervous or self-composed?

c. Does he appear energetic or tired?

8. Is he prompt in meeting and dismissing classes?

9. Does he appear to be master of his subject?

10. Does he use good English?

11. Is he honest with his pupils or does he bluff at times?

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The following are sample reports of observations accompanying Lesson VII:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Arithmetic 7B

The teacher in whose class I am observing is a fairly young man and dresses very neatly. There is nothing unusual or flashy about his clothes. He usually wears a dark suit, which is made in good style and which is very nice for the schoolroom. He has done very little work at the blackboard, and consequently I have not been able to judge his neatness in that line. The top of his desk is always neat. He has a medium-toned and firm voice. He speaks distinctly and rather rapidly. He is not irritable, yet at times he takes offense at certain things. He is not easily excited but is rather forward and gives one the impression that he is overseer

and boss in the room. He always looks squarely at the one to whom he is speaking. He always seems full of life and certainly radiates enthusiasm. He shows tact in dealing with the pupils. For example, there is a very small boy in the class who speaks very slowly and distinctly when explaining a problem, and he seems to afford amusement for the other pupils. One day after the little fellow had recited and there were grins on many faces, the teacher told the others that even if Ethan did do things that appeared odd to them, it might be well if they would all imitate his poise and deliberateness. The teacher seems to be in good health and nearly always cheerful. He is always self-composed, and his movements never indicate fatigue. He is very prompt in meeting and dismissing his class. He seems to be master of the subject he is teaching and never needs to bluff. The teacher uses good English and on the whole seems well fitted for the work he is doing.

OBSERVER: XXX

SCHOOL: XXX

CLASS: English

I consider the teacher whose class I am observing an unusually fine type in every respect. She displays a pleasing harmony of physical and mental characteristics. She is at all times neat, both in personal appearance and in her work; her desk is well kept, and her board work is orderly. Her dress is artistic and in keeping with the service in which she is engaged. Furthermore, she possesses a clear, pleasant voice which always remains even and which carries in it a note of enthusiasm that induces attention and interest. This teacher is at all times composed; her manner, which is direct, is characterized by a certain amount of tact and deference toward each individual, so that she commands the respect of the whole class. The pleasure she finds in her work is apparently due to her liking of it and probably also to her apparent good health. She possesses a good command of English and she quickly conveys the impression that she is master of her subject. There is no attempt to bluff on her part,—a characteristic which seems to have won the confidence and respect of the entire class.

LESSON VIII

Aim. *To obtain a proper concept of the purpose of routine and to become acquainted with effective means of establishing a desirable routine.*

Routine justified in adult society. If the socializing aim is a valuable one in our schools and if an ideal schoolroom society is one that approaches in citizenship principles the adult society into which the pupils are going after school days are over, then we must look to the amount and significance of the routine found in adult society as a guide in laying the basis for routine in classroom organization and control. All round us we find instances of routine. We put our left hand out of a car when slowing down, to signal to the driver behind us. We stand in line and await our turn when buying tickets at a railroad station; that is, good citizens do. We proceed in accordance with traffic signals at busy city crossings. So one might add indefinitely to the list of more or less well-routinized activities found in adult society. These will be needed in the schoolroom too, since school activities are social activities if properly carried on.

Parker in *Methods of Teaching in High Schools* tells of an instance in a downtown district in Chicago in which, as an experiment, traffic policemen were removed for a few minutes from the crossings. The result was that in a short time traffic came to a standstill. This instance discloses a vital principle in all human organizations, be they autocratic or democratic in their conception; namely, a maximum of freedom for all individually or collectively demands at least a minimum of restraint on the part of each member individually.

Routine not to curb individual initiative that is not incompatible with social projects. It is true that when we set up barriers to activity in any form, by that act we limit individual initiative. But this is a necessary process whenever many units are working to one end. The direction and extent of motion of the pistons of an automobile are fully defined in terms of the rest of the machine. Only in the chaos of wreckage can the parts of a unit break the bounds of the functioning machine. So it is in human society. Complete individual initiative can exist only where social chaos reigns. We must adjust our activities to those of the group in which we are to function.

But in the social machine—and in this it differs from the mechanical—the adjustment to the other units is a small, though important, part of the total activity of each unit. Within this adjustment there is a wide range for spontaneity of effort. Were it not for this fact human organization would be as worthless as it would be undesirable. The form here, as elsewhere, exists only that the content may be enhanced. It in itself is a tool and has no more intrinsic value than has any other tool.

Routinized form in schoolroom to enhance individuality and initiative in thought and action. A question often asked is Will not the routinization of the schoolroom activity tend to check individuality and initiative in the pupils? This might very well be, were not routine limited to the form which must precede thought and action. For example, it is often necessary to pass out materials to a class before taking up the lesson of the day. Well-routinized procedure enables the pupils to get the material before them with the least possible loss of time and energy. Once the material is before the class, the real, or content, activity begins. Routine has for the time being accomplished its work. To proceed farther on a routinized basis would turn routine into an end rather than a means. Routine should merely aid in setting before the pupils opportunities for educational experience.

It is, of course, true that the routinized activities themselves, though their purpose is to enhance content activity, become educational experiences because, as was said in substance above, the ability to set up and conform properly to needed routine is itself a worth-while and necessary outcome of education.

Restraint should result from social effort to enhance freedom and progress of all, individually and collectively. To one using surface reflection only, the traffic policeman may represent a despotic form of control. But further and deeper thinking reveals the fact that he is only exercising a function which we as citizens have placed upon him as a duty. It is this consideration that distinguishes democratic from autocratic control. So in the classroom we shall need rules and regulations to enhance both individual and collective activity. We should look upon this fact as an opportunity to give pupils experience in exercising judgment in the making of rules and regulations and self-control in obeying them. Such socially made rules and regulations in operation in the school teach the child through effective living in his schoolroom society to live in adult society. Conforming to the requirements of a good citizen, then, becomes a habit with the child. It is not a matter of an intellectual sanction alone, nor, on the other hand, one of blind obedience as to an autocrat. He will appreciate more fully the need of regulations by having participated in the making of them from early childhood and will have developed habits of conforming to them once they are made, though he personally voted in the negative. This aids preparation for living through living.

Rules and regulations for a society of children should fit present needs of group. One of the objections to defining education as a preparation for life is that it is ambiguous as to the "how," and as a result many attempt to imitate adult society in the schoolroom. This of course can be accomplished only by straining the naturalness of the life of the immature group and by adding undue pressure from an external source. The amount

and form of routine in a primary room may very well differ from that desirable in a high school. In the first place, little children need and can tolerate more easily the social restrictions placed about them. At any age it is not so much the following of rules and regulations that is likely to be obnoxious and badly suited to the ends of education as it is that those rules and regulations come from above. The teacher should lend his efforts to the end that the rules and regulations may come from the pupils as a body. The working out of the routine needed will form the very best possible disciplinary experience for the pupils.

Routine as means, never as end. It is very important that the proposition of establishing routine should be placed before the pupils as a means to some desirable end. They should feel also that the ends justify the means. This will aid in the establishing of needed rules and will tend to develop in the pupils a pride and interest in carrying out rules. They become pupil projects, and as in adult society the pupils as a group will consider the violation of rules a blocking of group enterprise. The rules may differ from those of adult society, just as those of one adult group may differ from those of another; but the underlying principles of establishing and carrying them out are the same. Hence the activity involved in routine becomes not only a means to a classroom end but, more important still, a curricular activity looking forward to the establishing of the ideals and habits of good citizenship.

Young children and needed routine. The ability of young children to establish and carry out needed routine may be learned by observing children at play. They seem capable in this case, even without the aid of the teacher (which is more than we have recommended above), of establishing rules and obeying them with the greatest of interest and exactness. We adults are constantly amazed at the extent to which children under proper conditions are capable of organizing themselves into groups and carrying out activities, each playing his part.

Breaches of established routine and means of preventing their recurrence. In keeping with the effort to democratize and socialize all schoolroom activity, all flagrant breaches of established rules should be placed before the social group or its appointed representatives for a decision as to the amount of injury done the group and ways and means of preventing its recurrence. For the teacher to take all such matters entirely into his own hands is to deny the group those experiences which it should have if the members are to learn to live in society. This phase of social training is quite as important as that involved in the socialized recitation.

Amount of student self-government which can be introduced. A word of warning is in point here. I have outlined above an ideal of schoolroom discipline toward which I believe all teachers should strive, but I realize that for many communities it can be but an ideal for many years to come. The ability to exercise group autonomy in civic and social matters is not lying dormant in the sense that it can be awakened at a moment's notice. High-school pupils, for example, who have had only such experience in group self-control as their unsupervised play and games have given are capable of but limited self-government in the schoolroom. Such self-government as they can exercise should be introduced gradually; but caution will have to be used lest one overestimate their trained capacity. One must have order; and to get it in an autocratic manner is preferable to not getting it at all. Student self-control will have to be brought about largely through a superintendence which initiates it in the lower grades, thus fitting upper-grade pupils for it.

The home training and general intellectual capacity of the pupils are factors to be reckoned with at this point. Pupils who come from homes in which discipline is either entirely lacking or of a low order will be at a decided disadvantage in adjusting themselves to group enterprise. It may be necessary to deal with a few such pupils apart from the group.

GUIDE TO OBSERVATION AND REPORT

1. Are examination papers passed in by pupils according to a well-thought-out plan?

2. Is material passed out to pupils according to routinized procedure?

3. Is the passing to and from recitation routinized?

4. Is there routinized procedure with respect to the viewing of specimens passed out by the teacher, such as microscopic slides, etc.?

5. Are pupils assigned to seats?

6. Is written work demanded upon uniform paper?

7. Are there forms to be followed with respect to titles, margins, place of signature, etc. in written work?

8. List additional routine which you observe.

9. Does the routine established seem to exist as a means or as an end in itself; that is, does it justify itself from the standpoint of facilitating legitimate classroom activity?

10. Does the routine established fit the present needs of the group?

11. Do you note any evidence that the routine established is the result of directed group enterprise or the result of an arbitrary decision by the teacher?

12. If the routine has been established by the pupils, do they seem equal to the task of carrying it out?

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The following are sample reports of observations on Lesson VIII:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Reading—Fourth Grade

For the most part the class activities in the room in which I was observing seemed to be well routinized. The pupils upon arriving at the school might, if they wished, go to the classroom. Leaving their wraps in an adjoining cloakroom, they had to go directly to their seats and begin work. The teacher was at her desk ready to help those who asked for aid. When the time for the reading period arrived the teacher took the necessary number of readers from the case and put as many on each front seat as there were pupils in that row. The child in that seat immediately began the work of distributing the books, leaving one on the desk of each pupil behind him. This was done quietly by the pupils. The result was that the books were distributed and the class ready for work in less than one minute. Routine, however, in this room does not seem to be carried to the extreme of serving no purpose but its own. The moment a book was placed upon the desk the child was free to pick it up or leave it there until a topic for reading was announced. One can conceive of routine being carried to the extent of giving a signal for picking up books. This would seem to the observer to be carrying on form to no purpose and likely to lend a machinelike atmosphere to the room.

When the lesson was over, the child at the back of each row immediately began the task of bringing books forward. The books were collected with the same facility with which they were passed.

There was no evidence that the established routine was the result of group enterprise. While the routine was carried out with clock-like efficiency it seemed to have been the result of teacher rather than pupil planning.

OBSERVER: XXX

SCHOOL: XXX

CLASS: English 10B

In observing a class which is studying literature there is little opportunity to observe routine work, since most of the time is occupied with discussion. There are, however, a few little points in which routine serves to good advantage. At a certain time after the class has assembled a bell rings, which serves as a signal to begin work. The class responds to it and immediately directs its attention to the teacher. The pupils are assigned to seats alphabetically. Written work is required on uniform paper in pen and ink, and the teacher has requested that the notebooks be of uniform size and kind. Lists of authors and books for outside reading are posted on the bulletin board, to which pupils may refer in small groups. At the end of a thirty-five-minute period of recitation a bell rings as a signal to begin the study period.

LESSON IX

Aim. *To appreciate methods of discipline and to develop ideals of discipline.*

Discipline a function of total teaching process. One may not speak of a teacher as a good teacher but a poor disciplinarian, for good discipline is closely related to good teaching. The teacher who is really teaching will generally have fairly good order, and one may be quite certain that continuous disorder is the result of faulty organization and technique in the process of attacking the lesson. For example, the history teacher whose questions are largely factual, who asks too many questions, and who directs them to individuals rather than to the class, will seldom if ever have order. He does not utilize the pupils' thinking power and hence does not command their attention. He may, through utilizing largely the emotion of fear, compel that which will pass with the uninitiated as good classroom order. But it is on the surface only. Pupils' attention and interest must be roused through the application of pedagogical principles.

Keeping discipline a matter of directing pupils' energy. Whether we are considering the recitation or the study period, the keeping of order is a function of the teacher's ability to utilize fully the energy of the pupils. They will be doing something all the time. The teacher's task is that of directing this energy into proper channels. He cannot and should not attempt to suppress its flow. If the pupils did not react to stimuli they would not be teachable. Instead of looking upon this manifestation of life and energy as something inimical to teaching, the teacher should look upon it as his opportunity. It is to the teaching process what the action of water is to placer mining.

Nothing could be done without it, but success lies in the directing of the stream. Hence the teacher's task is in part that of attempting to keep all the pupils busy all the time.

Individual differences in interests and capacity a source of disciplinary problems. It is not easy, or even possible, to keep all the pupils busy all the time. Even though the lesson is being taught perfectly, there will be exceptional instances in which pupils will disturb the class. There is the dull pupil who will not be interested in what is going on, because he does not understand. On the other hand, there is the bright pupil who will have seen through the problem long in advance of the rest and who is likely to be the center of mischief. Extra work can be assigned to the bright pupils during the study period, but during the recitation most of the discussion must fit the capacities of the large middle group. Hence disciplinary devices other than that of good teaching must now and then be brought into play.

General principles governing selection and use of disciplinary devices. The teacher must learn through experience the devices which he can use most effectively. Likewise he must develop a technique suited to his personality. Fortunately, however, there are principles governing the selection and use of devices which have considerable general validity. The beginning teacher can adopt these as rough tools, modifying them and refining his technique in the use of them as he gathers experience.

Keep disciplinary means in background. The first of these principles is that of keeping a considerable reserve of disciplinary processes in the background. The teacher who sends a pupil to the principal has lifted the curtain on the stage of his reserve. The pupils now are consciously aware that nothing more drastic awaits misbehavior; and, if the principal proves to be easy, the teacher has lost much if not all of his ability to bring the unruly pupil to order through the motive of fear. If the teacher is at his wit's end, it is much more effective to ask

the pupil to remain after school; then the pupil, principal, and teacher may talk the matter over, both the principal and the teacher keeping considerable in reserve.

Keep eyes upon class. The teacher who watches the floor or his textbook while teaching greatly increases the likelihood of losing the attention of the class. We like to look into the eyes of those who are talking with us. What they say is likely to have more meaning. The voice of one looking at the floor is not so likely to carry well, and hence causes the pupils to lose interest because they do not understand. Then, too, the effect of looking squarely at the individual who is about to cause disturbance generally has a preventing power which only the experienced teacher can appreciate.

Waiting for order. The device of stopping for a minute and waiting for order, meanwhile keeping the face straight and the eyes fixed intently upon the disturber of the peace, is often very effective. The writer recalls an incident which occurred while he was visiting a freshman class in college. Two or three girls began giggling over something that amused them. The instructor stopped the discussion immediately and with a serious expression on his face looked steadily at the girls for about thirty seconds. The result was very effective. Even the visitor felt uncomfortable. All were sitting in expectancy of something that did not happen. At the end of about thirty seconds the lesson was continued, but with no more giggling.

Anticipating trouble. The teacher will do well to anticipate trouble and attempt to forestall it. Certain pupils should not be permitted to sit near one another. John is ordinarily a well-behaved boy, but he and James have too much in common. If they are permitted to sit near one another the temptation to communicate is too great, and class disturbance is inevitable.

Element of suspense. It is difficult to overestimate the importance of the element of suspense in a disciplinary situation. The pupil who knows either because of promise or experience

the punishment which is to follow wrongdoing misses the biggest part of that punishment. Waiting for dad to come home is worse than that which follows. The child told to remain after school is not only likely to cause no more trouble that day but to remember longer and with more displeasure the punishment which followed the deed. This procedure will tend also to prevent the teacher's losing his temper before the class.

Knowing pupils and parents personally. Many a difficult case of discipline fades away, once the teacher really comes to know the pupil and his parents. An intimate acquaintance with his father often has a mysterious effect upon John. Let us not deceive ourselves at this point into thinking that this effect is all owing to the fact that John fears his father and thinks the teacher likely to report his actions. Because of that acquaintance the teacher understands John better, and John feels that the teacher takes a personal interest in him. The bond of friendship which should spring up between pupil and teacher through personal acquaintance is too valuable to be overlooked in discussing situations which make teaching possible.

Use of tact. Tact is so necessary in any situation in which one has to deal with people that its value has no special reference to teachers. Delicate situations are always present. The feelings of one's fellow men can be ruthlessly trampled upon or carefully considered in any social situation. It is especially possible for one occupying a commanding position to do either. The teacher may be cutting in his remarks or he may be considerate. Cutting remarks get him nowhere with the individual to whom they are addressed and are certain to bring him the ill will of the class. The following remark of a college student with respect to his teacher is in point here: "He never said anything to injure the feelings of any student; he was too much of a gentleman." Such a feeling on the part of students means much in creating a situation in which learning is possible. The use of tact involves the intelligence to comprehend delicate

situations plus the habit of giving consideration to the feelings of those with whom we are dealing.

Tact does not mean the surrender of one's authority but rather the use of it with consideration. The tactless teacher usually surrenders considerable authority in attempting to regain the good will lost during tactless moments. Bagley has the following to say on this point:

> One should not understand by tact a willingness to surrender a single increment of the authority that belongs to one. But, after all, it is the result that is important—the fact, not the form. If the teacher can preserve his authority without vaunting it upon all occasions, his path of life will run smoothly. Order and respect for his authority are the salient points. If these are secured, it matters little what people think, so long, of course, as their opinion has no injurious influence upon his work. In other words, there is no reason for a display of authority simply to emphasize the fact of authority. Those who exercise the greatest power in the world are the very people who keep the fact from impinging continually upon their neighbors' consciousness.[1]

Knowledge as a factor in discipline. Other things being equal, the individual with the more complete mastery of his subject will have a decided advantage in maintaining order. Pupils soon lose respect for the teacher who is often found lacking in knowledge of subject matter. If he is fully aware of the seriousness of his weakness, the embarrassment that will follow will cause him to lose sight of the matter of order. He directs his attention from the technique of teaching to the matter of solving the problem himself. Under such conditions pupils turn their attention to other things. The teacher, being irritated at his inability fully to perform his function because of lack of knowledge, is likely to say cutting things and in other ways to undermine the pupil's respect for him. Then, too, knowing one's subject adds poise and dignity to one's bearing, and makes

[1] W. C. Bagley, Classroom Management, pp. 94–95. Copyright by The Macmillan Company. Reprinted by permission.

it much easier for one to be patient, sympathetic, and kind in one's dealings with the pupils.

Many unprepared teachers take the fatal horn of the dilemma and attempt to bluff. The teacher who does this not only loses his self-respect but is sure to be found out sooner or later by the pupils. When once he is found to be bluffing, a certain "discount" is almost sure to be made for all that he may say henceforth. Were he fully aware of the almost certainly disastrous effects which follow he would do no bluffing but would readily admit his lack of information on the point under consideration and strive the harder so to prepare his lessons that it should never occur again. This manner of dealing with the situation makes it possible not only to regain the ground lost but actually to strengthen himself, for the pupils will be more likely to take his future statements of fact as from one who would readily admit any doubt. This is a desirable situation and can be obtained only by frankly confessing one's ignorance when necessary, at the same time making every effort to prevent the frequent occurrence of such necessity.

Proper routine makes for better discipline. The confusion that results from lack of a proper amount of routine not only wastes time but lures the pupils into conversations and interests which tend to break down the classroom discipline. The passing out or collecting of papers, for example, should be done according to form and with dispatch. This does not mean that all activity should be routinized. There should be plenty of room for initiative but at points less fatal to classroom order, or, in other words, less likely to lead to individual activity and interest which run counter to the immediate aim of the group. Care must be taken that only those activities are routinized which are in the main preparatory to educative processes. The passing of papers, the getting of wraps, or the passing of lines in the hallways are not primarily training activities; yet they may be routinized so as to facilitate the more properly curricular

activities. On the other hand, routinization may be easily carried too far in the manual-training shop or the regular classroom where the processes are more truly educative and where initiative and individuality of reaction are invaluable.

Corporal punishment. Educators are well agreed that corporal punishment should not extend beyond the elementary school. Only in rare instances should it be recommended above the primary grades. One can conceive of cases in the intermediate grades where rightly administered corporal punishment might enable the teacher to keep the child until such a time as he can get a hold upon him through other channels. Where corporal punishment is used with small children, spanking has the fewest objections. This should be done after school, preferably in the presence of another teacher or the principal, but never before the class. On the matter of corporal punishment Professor Sears has the following to say:

> Corporal punishment is not only wise but necessary under certain conditions. A child whose home training has been coarse and brutal, and who has never had an opportunity to develop respect for anything except physical strength, is practically incapacitated for understanding any other type of punishment than that which demonstrates the teacher's superior physical strength and her willingness to use it on offenders. Such a child is to be pitied, and though such punishment will be temporarily necessary to bring him within the reach of better influences, yet, as rapidly as possible it should be dispensed with, and the child should be made to feel himself a member of a group which is bound together not by force but by the spirit of coöperation toward the common good.[1]

Because many teachers abuse this disciplinary device and employ it before trying others, it is with hesitancy that we suggest the possibility of its use. Many of the best-disciplined schools seem to have dispensed with it entirely. However, such schools are generally located in communities of the better class. The

[1] J. B. Sears, Classroom Organization and Control, p. 80. Riverside Textbooks in Education Series. Reprinted by permission of Houghton Mifflin Company.

home environment of the child has much to do in determining his fitness to enter the social life of the school. With but one or two untrained children in the room discipline is greatly simplified and corporal punishment may be inexcusable.

Rules. It follows from what has been said above that the laying down of rules, especially when accompanied by a statement as to what punishment is to follow their violation, is extremely poor pedagogy. In the first place, the rule often serves as the stimulus to the act. In the second place, pupils will often count the cost and dare one another to brave it.

Nagging. The teacher should watch himself with great care to see that he does not get into the habit of nagging. Once is enough to tell a child what is wanted. The teacher who will tell him three or four times may do so. The request should be made clearly and firmly but not repeated. If the child does not respond, the simple request that his presence is desired after school will be sufficient.

Discipline of a room can be evaluated best by one who thinks of the group as a miniature society. The type of government desirable will depend much upon the society for which the group is preparing. One may still find cases of classroom government which are more suited to an autocracy than to a democracy. Discipline should take its rise as far as possible from the group itself. The child who has been punished by group disapproval has learned a valuable lesson by way of preparation for living.

Age of pupils affects methods of discipline. All this does not mean that pupils of all ages are capable of self-government. A skillful teacher must be present to guide the group opinion and to develop the needed respect for it. Respect for group opinion, however, has a strong instinctive basis and hence is a powerful means of controlling the action of the individual. The teacher will not lay down rules but, with the aid of the pupils as occasion arises, will develop social sanction for desirable ways of acting.

Exceptional child must be reckoned with individually. There is, of course, the exceptional case of the child who, owing to faulty early training or abnormal inheritance, does not seem to be subject to the laws governing social life. The teacher must not let this individual destroy the order of the class. Special punishments must be devised and made sufficiently powerful to restrain him until such time as he seems capable of taking his place as a member of the social group. This is the method employed in the larger society. The type of punishment must suit the individual case, at the same time conforming to certain general criteria. It is a good rule to avoid any punishment likely later to interfere with the pupil's becoming an active member of the group. Generally the most effective way is to call the offender to one side after class and point out the harm he is doing. Give him another trial; meanwhile visit him if possible at his home. Discover his interests and if possible gain his friendship. This the writer believes from experience will cure 75 per cent of the disciplinary cases.

Discipline has a positive side. Do not forget that discipline has a positive side. It does not exist entirely as a propædeutic to instruction; it is itself a vital part of the curriculum and must be carried on as one of the aims of education. We do not learn to govern ourselves while being governed by a tyrant. And that teacher is the successful disciplinarian who keeps order and at the same time makes the schoolroom a laboratory in which the pupils learn to live in society as free and responsible beings.

Discipline should build up, as far as possible, pupils' self-respect. The teacher who, in the presence of the class, accuses a pupil of cheating in an examination, for example, has lowered his self-respect. If he repeats this sort of accusation many times he tends to lower the moral tone of the entire class. Cheating becomes identified with those trivial things about which teachers scold. In the long run it is much more effective to deal with such matters privately and only with individuals concerned.

Cheating, and other forms of social impropriety, should be dealt with so as to make the individual concerned feel that his offense is such that the teacher would not for the world mention it to anybody else, that the pupil is above such work, and that he has a chance to make good. Discipline dealing with moral problems in a way that does less than this is a failure.

GUIDE TO OBSERVATION AND REPORT

1. What percentage of the pupils do you find at work?

2. Do those not at work disturb the rest?

3. Are pupils allowed to communicate with each other?

4. Do they take advantage of this privilege?

5. Have pupils learned to do necessary communication without disturbing those about them?

6. Does the student body resent being willfully disturbed by a member of the class?

7. Do you note any specific devices used by the teacher in classroom discipline?

8. What methods of punishment, if any, does the teacher resort to?

9. Does the order in the room seem to come from the fact that the pupils are considering the rights of their neighbors or is it apparently the result of fear of the teacher?

10. Do you note any nagging on the part of the teacher?

11. Does the teacher lay down a set of rules restricting action?

12. Does the teacher anticipate disciplinary problems and avoid them?

13. Does the teacher command the attention of the entire class?

14. Is failure to command the attention of the entire class caused by outside interests or by indifference?

15. Does the teacher make any effort to remove the source of outside interests?

16. Are questions generally directed to the entire class or to one member?

17. Does the teacher pause for order or raise his voice?

18. Does the teacher treat the disturbance as an offense against the class or against him?

19. Disciplinary devices used
   a. Corporal punishment.
   b. Humiliation before class.
   c. Conference with trouble-maker.
   d. Extra work.
   e. Social disapproval.

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The following are sample reports of observations accompanying Lesson IX:

RECITATION PERIOD

As the pupils entered the room they quietly seated themselves at their desks, on which had been placed the papers from the previous examination. Some discussion arose among them relating to the merits of the grades, but this ceased as the signal for beginning the recitation was sounded. The teacher lost no time at this point in taking up the work of the day. She began by going through the questions and discussing the answers. At times she called upon certain pupils who had answered well to read what they had written upon a given topic.

OBSERVER: XXX

SCHOOL: XXX

CLASS: U. S. History 11B

This part of the recitation was followed by a discussion led by the teacher, comparing advantages and disadvantages of England and America in the Revolutionary War. Her questions were such as to keep the pupils busy in problem solution, and there was no tendency to disorder. There was a slight tendency, however, for a few to take part in the discussion without first securing permission. This at times caused the condition of having two talking at once, but little confusion resulted since the teacher recognized the one or the other and the one who was not recognized ceased at once.

The two factors that seemed most effective in obtaining discipline were good questions well put and a completely worked-out routine of procedure.

STUDY PERIOD

The recitation, which lasted twenty minutes, was followed by twenty minutes of study, the teacher having first carefully assigned the work. All the pupils, excepting one, began immediately to study. The teacher observed the fact that this one was not studying but said nothing until he attempted to attract the attention of a girl across the aisle, when the teacher said, "John, the rest of us are working." This seemed sufficient, as John immediately settled down to his task. Communication, however, was permitted. The pupils felt free to go to the wall map and trace out campaigns together or ask questions of one another while at their seats. The communication carried on seemed only to be that which was necessary, and it was done in a serious and orderly manner, disturbing no one.

There was no evidence of any rules laid down on the part of the teacher. She gave the impression of taking it for granted that the pupils were there to work. There was no necessity for nagging, for the only pupil to whom it was necessary to speak obeyed instantly.

OBSERVER:	XXX
SCHOOL:	XXX
CLASS:	Algebra 10A

At this time special attention was paid to the methods of discipline used in the schoolroom. During the study period I noticed that most of the pupils were busy preparing the advance assignment. There were perhaps one or two whose minds wandered from the work before them. One boy began tapping his desk with his pencil, and I noticed that some of the others resented the disturbance. The pupils are allowed to communicate during the study period, but they do so very quietly and do not take advantage of their privilege. I have noticed no specific devices used by the teacher to maintain discipline except that he snaps his fingers occasionally and sometimes scolds one pupil in the presence of the others. I have witnessed no punishment in the room, with the ex-

ception of one case. One boy who came to class late for the second time was sent for an excuse to the instructor he had had the previous hour. He returned with the excuse, and after a few remarks by the teacher the case was dismissed.

I believe all school children are orderly because of the presence of the teacher and a fear of discipline. Such seems to be the case in this classroom. When the teacher is absent from the room the order is not so rigid as when he is present. The teacher does not have to nag at the students, as this class is an unusually energetic and studious one. There are two or three boys in the class who have to be prodded a bit in order to keep up with the others. The teacher evidently has rules of his own, which are made evident from time to time as occasion demands.

Each day that I have observed in this class the recitation period has been used for work at the blackboard and explanations by the students. Therefore the attention of the students is fixed on the blackboard and not on the teacher. When the teacher is speaking, I have noticed that attention is pretty well fixed on him. His questions are usually directed to the entire class, but sometimes he surprises one of the pupils with an individual question. The teacher does not raise his voice to a loud, high pitch in order to be heard but stops talking until quiet is restored. He seems to treat a disturbance as an offense against the class. He seems to be a very competent teacher; but he sometimes addresses the class as "kids," and I consider that a very unwise thing to do.

LESSON X

Aim. *To become acquainted with such activities as affect the school in general and to form ideals of coöperation.*

Aside from classroom work the teacher is a part of a large organization requiring coöperative ability on his part. The factory analogy, although much overworked in discussing school problems, is perhaps the most in point here. The work of each employee must lend itself to the total functioning of the plant. Friction and working at cross purposes must be reduced to a minimum in any effective enterprise. So, too, in the school plant, the matter of whole-hearted coöperation with executive officers is of the utmost importance.

Hence the teacher must yield at points and with good grace work in harmony with the general administration. When for any reason he finds that he cannot effectively discharge this part of his function he should resign immediately; for, regardless of his ability as a classroom teacher, he will find his influence tending to disrupt the organization.

In this connection the teacher should also remember that he is neither an expert nor experienced in the matter of school administration. He will not always understand the purpose of much that he is asked to do. But he must have faith that there is a purpose behind the task assigned him and that the one who is responsible for the operation of the school as a whole has this purpose clearly in mind.

Because of the teacher's inability to comprehend the function of the school as a whole he often magnifies the importance of his particular task, thus taking time from other teachers or from the pupils themselves. The overanxious academic instruc-

tor may make such assignments as seriously conflict with an extramural activity which is in and of itself highly educational. The principal is more likely to see the all-round needs of the pupils and provide for them in a large way.

In matters more nearly routine, such as reports, fire drills, etc. efficiency may make demands which a teacher from his point of view cannot fully appreciate. The principal, whose duty is to provide for harmony and concert of action and who is in a position to observe the work of the school system as a whole will see most clearly the part to be played by each coöperating individual. Hence it is necessary that his instructions be carried out with loyalty and dispatch.

GUIDE TO OBSERVATION AND REPORT

1. Describe the fire signal.

2. What in general is the part played at such times by the teachers?

3. State in general what the pupils and teachers of the building are to do when the fire signal is given. Notice (1) the order of march, (2) the place of the teachers, (3) the duty of the teachers, (4) the return of the pupils to the room.

4. State in detail what the pupils of your room are to do when the fire signal is given.

5. State in detail what the teacher of the room in which you are observing is to do when the fire signal is given.

6. Do the pupils leave the room in line at dismissal?

7. Are there regular teachers' meetings?

8. How often do teachers' meetings occur?

9. Are there boxes in or near the office for communications from the principal to the teachers?

10. Describe in full the system of recording, reporting, and excusing cases of tardiness and absence.

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SEARS, J. B. Classroom Organization and Control, chap. ix, pp. 109–121, "Organizing the School." Houghton Mifflin Company, 1918.

The following is a sample report of an observation accompanying Lesson X:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9A

When the gong is sounded three times, the students know that that means fire or fire drill. It is the duty of the teacher to see that the students immediately stop work and form into twos ready to march out of the room. In some cases a large boy in the class is selected as leader, and it is his business to see that the others line up. He then holds the door open while the others pass out. The teacher follows the students out of the room. The students in the room in which I am observing go down the left side of the stairway at the front entrance. They are supposed to walk briskly, but no running is tolerated. One gong is sounded as a signal for every one to return to the building. The students march back into the building and to their rooms. At dismissal time and between classes the students do not have to leave the room in line and do not have to pass through the hall in line. No running is allowed in the halls. The halls are fairly wide, but there is sometimes congestion at the corners or near the drinking-fountains.

The teachers' meetings are usually held on Tuesdays at 3.35 P.M. The meetings are not held regularly at this time but are called at

least once a week. At the right as one goes into the office is a large bulletin board. It holds general information with which all teachers should be familiar, such as lists of pupils withdrawn from school, those to be excused for various school activities, and many other things. Each teacher has a pigeonhole or box for mail in a large mail box in the general office.

Upon returning to school after absence the student must report to the principal and receive a signed "admit" slip. This slip is presented to the session-room teacher, who signs it. The student then presents it to each classroom teacher from whose class he has been absent, and each one signs it. These slips are graded A, B, or C. If an excuse has a circle round the A, the teacher is required to permit the student to make up the work. If the circle is round the B, the teacher may use his or her own discretion about allowing the student to make up the work. If the grade on the excuse is C, the student is not allowed to make up the work and consequently receives a zero for the day or days missed.

Tardiness is recorded and reported to parents on the grade cards. An absence is recorded and also placed on the grade card. Each teacher has a long yellow slip with small spaces, one for each class. The absences are recorded on this slip, which is signed by the teacher and sent to the office during the fifth period. A daily session-attendance report is kept for each session room. Students who are to be excused from a class must present an excuse signed by the principal. Girls who are ill may obtain from the dean of girls a signed card which excuses them from class.

LESSON XI

Aim. *To appreciate individual differences in the pupils with respect to physical development, and to study the question in general.*

At bottom, teaching is the directing of changes in the neural paths of individuals. We may group individuals so as to enhance the process by producing those changes simultaneously in many. This grouping gives us the so-called class. The grouping is favorable to just the extent that it is truly a class with respect to all factors affecting the learning process or the changes in the neural patterns. Many physical anomalies will enter for consideration at this point, for they are factors likely to affect the learning process. We shall discuss the most important of them.

Ill health. The health of the child is an important factor in the learning process. So important is the matter that many school systems are keeping full-time medical staffs, not with a view to promoting health for its own sake but largely with a view to enhancing the teaching process itself. Hence the teacher should watch for cases of ill health: first, that he may report to medical officers or parents the fact that the pupil's health needs attention; secondly, that he may adjust the study load to the pupils.

Then there is the case in which the pupil whose health is generally good becomes temporarily ill. The teacher should note these cases and in some instances excuse the pupil from further participation in the lesson. Every high school should be equipped with a rest room for girls. This should be large, pleasant, and well furnished, and so located that the noise from the corridors will be least likely to disturb the occupants.

It is generally not difficult to determine cases of ill health or sudden illness. Pallor of the face, lack of luster in the eyes listlessness of attitude, slow movements, etc. give a fairly reliable index to the general health of the individual. Sudden illness can be told most readily by one who knows the pupils. Changes in color, either to a pale or to a flushed face, drooping of the head, an unsteady walk, etc. give an index to sudden changes in the health.

Abnormalities of development. The teacher should note any abnormalities of physical development affecting various members of the class, for there is always the possibility of suggesting remedial measures. Of course, in many school systems each pupil will be required to submit to a physical examination given by the medical staff. In this case the teacher can refer to cards usually on file in the office of the principal and obtain full information with respect to the physical condition of any given pupil. This will often prove profitable. The individual with a sunken chest, for example, should not escape the notice of the teacher. If the teacher is aware of this defect, he can counsel the pupil alone and tell him to sit up straight, take breathing exercises, stand erect, etc. In other cases nothing remedial can be done in the sense of bettering the physical condition. The physical background, however, will often account for the mental peculiarities of the individual. The lame child is likely to be spoiled by his mother, who flies to his defense on the slightest provocation. The experience of such a child will probably be limited along social lines. Hence he cannot coöperate well with others. After the age of adolescence such a child is very likely to become moody. The teacher should at least be aware of the origin of such mental characteristics in order to deal effectively with the individual pupils.

Defective vision. Physical examinations reveal the fact that on the average about 25 per cent of the grade-school population are defective in vision. In certain European cities the propor

tion runs as high as 40 and 50 per cent; and in a congested district in Cleveland, Ohio, where 663 children were examined, 71.7 per cent were found to be defective in vision. Since a large part of the instruction is given through the eyes, these facts should be very significant to the teacher. He should inform himself as to the cause and do what is possible to remove it in his classroom. Natural and artificial lighting should be observed and regulated to the best advantage of the eyes. Textbooks should be examined with respect to size of type especially. From research made in this field, it is doubtful if type below 12-point should be used in school texts, even for the upper grades and high schools. This field has not yet been completely studied. The writer found that type below 18-point reduced the rate of reading below the fourth grade.[1]

The vision of all the pupils should be tested at least once each year. Along with this the classroom teacher should be constantly on the watch for signs of eye trouble, such as squinting, headaches, and redness of the eyes. The difficulty when once located should be reported to the medical staff or to the parents. It may happen, and it often does, that the pupil has been properly fitted with glasses but has outgrown them, or is not wearing them because of false pride. The medical staff alone cannot attend to these matters. The teacher must be alive to this common difficulty and be prepared to meet it. The following directions for testing vision were prepared by the Massachusetts Department of Education:[2]

The purpose of the school test of vision is:

1. To find out which pupils have such a defect in their acuteness of vision as may interfere with their school work.

2. To be able to notify the parents of such pupils that a careful examination of the eyes is needed to see if the vision can be improved.

[1] *School and Society*, Vol. XVI, pp. 697–700.

[2] Reprinted with permission.

Directions

1. The tests will be made as early in the school year as possible, preferably in September.

2. The tests will be made under the most favorable conditions, and as nearly as possible under the same conditions, preferably in well-lighted rooms, in the early part of the day.

3. The testing will be done by the teacher of the class, and will be supervised by the principal to see that the conditions of the test are as uniform as possible for the different classes.

4. Children wearing glasses will be tested *with the glasses*, and if found normal will be so recorded.

5. Examine all children, but record as defective only those whose vision is 20–40 or less, in either eye.

6. Report to the superintendent of schools the whole number of children examined and the number found defective according to the standard given in No. 5.

To test the Eyesight

Hang the test card of E symbols in a good clear light (side light preferred) on a level with the head, and so placed that the child does not face a strong light. Place the child 20 feet from the card. Cover one eye with a card held firmly against the nose, without pressing on the covered eye, and have him read aloud, from left to right, the smallest E symbols he can see on the card, stating the direction in which the prongs of each symbol point. Make a record of the result. Young children should be handed an E symbol like those on the card, and should be directed to turn the prongs of the symbol so that the prongs shall point in the same direction as the prongs of each E symbol on the chart.

To record the Acuteness of Vision

There is a number over each line of the test symbols which shows the distance in feet at which these symbols should be recognized by a normal eye. From top to bottom, the lines on the card are numbered respectively 50, 40, 30, and 20. At the distance of twenty feet, the average normal eye should recognize the symbols on the 20-foot line. If this is done correctly, or with a mistake of one or two symbols, the vision may be noted as 20–20, or normal. In this fraction the numerator is the distance in feet at which the symbols are read, and the denominator is

the number over the smallest line of symbols read. If the smallest symbol which can be read is on the 30-foot line, the vision will be noted as 20–30; if the symbols on the 40-foot line are the smallest that can be read, the record will be 20–40; if the symbols on the 50-foot line are the smallest that can be read, the record will be 20–50.

If the child cannot see the largest symbols, the 50-foot line, have him approach slowly until a distance is found where they can be seen. If 5 feet is the greatest distance at which the 50-foot symbols can be read, the record will be 5–50 (1–10 of normal).

Test the second eye, the first being covered with the card, and note the result, as before. With the second eye, have the child read the symbols from right to left, to avoid memorizing. To prevent reading from memory the child may be required to read the symbols in irregular order. A mistake of two symbols on the 20 or the 30-foot line, and of one symbol on the 40 or the 50-foot line may be allowed.



FIG. 16. E Symbol

To be handed to young children

NOTIFICATION OF PARENTS

The teacher will notify the parent or guardian on one of the notice cards, as required by law, whenever the vision in either eye is found to be 20–40 or less. No notice will be sent when the vision is 20–20 in both eyes, 20–20 in one eye and 20–30 in the other, or 20–30 in both eyes.

When glasses are used the vision will be tested with the glasses. A notice card will also be sent when the teacher finds that the eyes or eyelids are habitually inflamed; when there is complaint of pain in the eyes or head after reading or writing, especially toward the end of school hours; when one or both eyes deviate from the normal position,—squinting; when the book is habitually held at less than one foot from the eyes; when there is constant scowling and evident effort in using the eyes.

If the vision is as low as 20–40 in either eye, with glasses, find out, if possible, from the practitioner who prescribed the glasses, whether the child should be reëxamined, or whether his school work should be modified so as to reduce eye strain. The school nurse may be able to secure this information in coöperation with the parents.

The following symbols are used for measuring the acuteness of vision. When not in use the chart of test letters should be placed in an envelope or otherwise carefully concealed and protected.

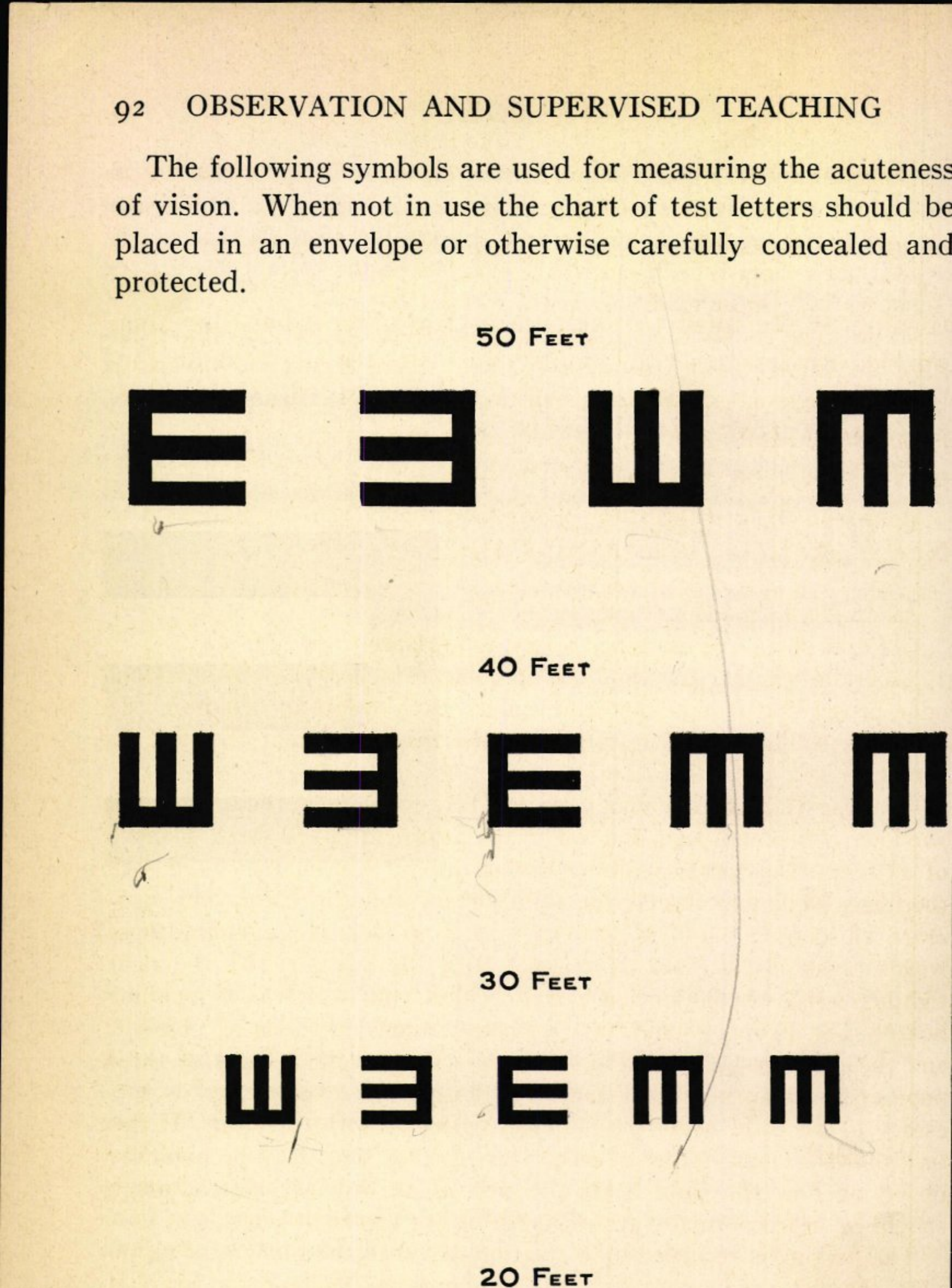


FIG. 17. A miniature copy of Snellen's test symbols

Defective hearing. Next to eye trouble, defective hearing is one of the most common causes of failure to learn. As in the case of vision, the teacher should be ever on the lookout for auditory trouble. Failure to understand the teacher's directions, the turning of the head to one side or the other when listening, puzzled expressions, etc. should cause the teacher to look farther for hearing difficulties. Pupils who exhibit these characteristics should immediately be given an auditory examination. All pupils should be examined at the beginning of the school year.

The following directions for testing hearing are given by the New York State Department of Health:[1]

All children should be examined.

Children should be examined singly and privately.

Ascertain whether the child has frequent earaches, has pus or a foul odor proceeding from either ear, suffers from frequent "colds in the head," is subject to a constant catarrhal discharge from the nose or throat, or is a mouth-breather.

Seat the child facing you near one end of a *quiet* room with the windows *closed* and begin the test of the hearing at a *measured* distance of 25 feet. The test is made by having the left ear tightly closed with the finger while you observe the ability of the child to repeat your *moderate* whispers of numbers between 21 and 99 inclusive, avoiding those with ciphers; as, 75, 55, 37, 22, etc. Test the left ear with the right tightly closed. Avoid having a wall behind you to act as a sounding board. The figures should have as nearly equal emphasis as possible, and the distance at which the child correctly repeats a series of three numbers gives his hearing distance for that ear. No further test is necessary if the child hears the numbers perfectly with each ear. If this test shows a slight defect of either ear, further tests may be made by observing how the child hears the tick of an ordinary watch, which should be heard normally at a distance of not less than 3 feet.

The hearing is recorded by a fraction of which the numerator represents the distance you are from the child and the denominator is 25. If he repeats the numbers correctly at 25 feet his hearing is 25/25 or normal. If he only repeats the numbers correctly when you are at 20 feet it is 20/25 or 4/5 the normal, and at 12 feet 12/25, etc.

[1] Reprinted by permission of Medical Inspection Bureau, state of New York.

The teacher should observe for the following indications of ear defects which have been listed by Dr. L. M. Terman:[1]

1. Pupils often say "What?"
2. Inattention.
3. Stupid appearance.
4. Expressionless voice.
5. Poor spelling.
6. Poor progress in general.
7. Imperfect speech.
8. Complaint of earache.
9. Running ear (discharge often being present without being easily observed).
10. Peculiar postures (in attempts to hear).
11. Difficult nasal breathing (often present with ear trouble).

General nervousness. Although general nervousness is not so closely related to the gathering of information as are sense defects, it is nevertheless an important consideration affecting vitally the child's future well-being as well as his present ability to learn. The teacher should therefore become familiar with the reactions which indicate nervousness that he may do all within his power to improve the conditions under which nervous pupils work.

The following are a few of the more obvious signs of nervousness for which the teacher should watch:

1. Twitching of the muscles of the eyes, mouth, or fingers.
2. Shuffling of the feet.
3. Grinding of the teeth.
4. Chewing pencil or nails.
5. Jumping when spoken to or when touched.
6. Stuttering.
7. Poor muscular coördination.
8. Outbreaks of passion.
9. General restlessness.

[1] The Hygiene of the School Child, p. 243. Copyright by Houghton Mifflin Company. Reprinted by permission.

GUIDE TO OBSERVATION AND REPORT

1. List those pupils whose health seems impaired.

2. Note any abnormalities of physical development.

3. List those who seem to have eye trouble, and whether they need glasses or need to have glasses better fitted to the eyes.

4. Note the instances of auditory trouble.

5. Note any evidences of extreme nervousness in pupils, also stuttering or stammering.

6. Note instances of extremes in the age of the pupils.

7. Note extreme degrees of physical maturity or immaturity as indicated by looks, voice, etc.

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TERMAN, L. M. The Hygiene of the School Child, chap. xiii, pp. 221–243, "Defects of Hearing and Hygiene of the Ear." Houghton Mifflin Company, 1916.

WOODROW, HERBERT. Brightness and Dullness in Children, chap. v, pp. 81–96, "Physical Defects." J. B. Lippincott Company, 1919.

The following are two sample student reports of observations accompanying Lesson XI:

OBSERVER: XXX

SCHOOL: XXX

CLASS: History 10B

For the most part the class appears to be homogeneous with respect to age. I should guess the oldest member to be about nineteen years and the youngest member to be about fourteen years of age. Two of the pupils, a girl about sixteen and a boy about seventeen, seem to lack the proper vitality. It is possible that they are not getting the proper amount of sleep. However, they do not appear to be drowsy at present. None of the pupils are wearing glasses, although there is some evidence that Mary Rose and Ira Morse need them. They lean forward and frown when trying to read material written upon the board. The eyes of several are inflamed and indicate need of glasses. Those pupils should be reported to the school nurse.

One of the girls, Nellie Smith, seems to be somewhat undersized for her age. However, her health appears to be good, and there is no evidence of nervousness. No evidence of auditory trouble is observable.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9A

The students in the class in which I am observing seem to be in fairly good health. There is only one student who might be an exception. He is a very small boy whose neck seems to disappear into the folds of his coat when he raises his shoulders. He sits in a front seat, which is entirely too large for him. He wears glasses, but does not seem to have any auditory trouble. There are no

others in the class who seem to be abnormal in development. There are several large boys in the class, but no doubt they are repeating the course. The ages of the students range from thirteen to seventeen years. Three of the students wear glasses. One of these is a little girl who is deaf. She cannot hear any of the explanations in class and gets most of her work from the book. Sometimes the teacher keeps her after class and speaks very loudly to her in an effort to explain some things. He sometimes tries to help her during the study hour, but he annoys the other students by speaking so loudly to her. None of the students seem to be very nervous, and they seem composed and deliberate when explaining problems at the blackboard. One boy in the back of the room seems to be conscious of my presence, as I sit in the back of the room also. He glances at me in a manner which makes me think he wonders if I am watching him. There are no extremes in the age of students except possibly in the case of the small boy to whom I have referred before. Some of the older boys have deep voices and look older than the others. These are the ones I referred to as probably repeating the course. One of the students is a senior in high school and probably failed in the course when a freshman. The class as a whole is a very unusually intelligent one. None of the students are laggers, and there is keen competition among all of them.

LESSON XII

Aim. *To appreciate the problem of individual differences with respect to social, moral, and temperamental characteristics in general and to observe the social, moral, and temperamental characteristics of the pupils in the class which the student is to teach later.*

During the last lesson we have been studying and observing physical differences in the class constituency. We are now to attend to social, moral, and temperamental differences. After all, the class is a social group, and each individual must be treated as a personality. The teacher should work with the grain and not against it. He should keep ever in mind the fact that temperaments differ. Not only this, but the pupils come from homes which vary widely in environmental influence. Prejudices of religious, political, social, and neighborhood varieties affect the dealings of the teacher with the pupils. A thorough knowledge of these social peculiarities of the individual members of the class not only enables the teacher to avoid unpleasant class discussion but also enables him to round out the social ability of each pupil by properly guiding reading, discussion, and other activities.

Out of this maze of temperaments, distorted allegiances, and prejudices must come an intelligent and efficient citizenry. The nonsocial must be made social. The individualist must learn to coöperate. The socially warped must be made to see life in a large way. All these are among the tasks of the teacher. He is not teaching mathematics but young people, and the bigger aims of the daily lessons must be set up in terms of the pupils' present status and their future needs as members of an intelligent and

efficient citizenship. All this demands that the teacher know the social and nonsocial characteristics of each pupil.

Shyness. The extent to which shyness has its basis in innate qualities or is the result of training remains unsettled. However, we may be rather certain that a tendency toward shyness may be greatly enhanced or retarded by the home and neighborhood life of the child. In many homes children are so repressed that they are not allowed to express their ideas at the table or while elders are engaged in conversation. They are plainly told that children are to be seen and not heard. Their ideas are belittled at all times. It is small wonder that timidity results from such a course of action. The treatment in such cases is to develop confidence in the individual by setting up the proper schoolroom atmosphere. The pupils should be encouraged to express themselves freely on the problems brought up for class discussion. A teacher may easily spoil this freedom by making light of the thoughts and suggestions of the pupils. He must keep near their level and think with them, weighing and considering their suggestions. He must bear in mind that for many pupils the class affords about the only occasion in which they are taken seriously and given an opportunity to develop initiative and self-confidence. He should even go farther than this and set up a situation in which the shy pupil will be requested to give his ideas or experiences and in some instances provoked to defend positions taken in certain matters. Such conscious efforts as these on the part of the teacher will do much to overcome shyness on the part of individual pupils.

Boldness. Pupils are often inclined to be too bold. While this condition is possible, it seems much to be preferred to that of extreme shyness. As far as environment has anything to do with the matter, boldness in the individual is perhaps the result of not having felt his limitations. It is no sign of mental superiority. On the contrary, it is oftener an indication of mediocrity. That the pupil should have this reserve of confidence in

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himself, however, is much in his favor. The teacher should no seek to repress it but rather use it to encourage the pupil t attempt useful tasks within his range. The wise teacher wil no more try to break down this self-confidence than the skille horse-trainer will break down the self-confidence of a colt b hitching him to a load that is too heavy for him. Sometime boldness takes the form of insolence. The skillful teacher ca generally manage such cases by being patient and letting th pupil defend his position by further study and investigation The teacher should never take the position of an authority. Th problem-solving attitude is a healthy one for all.

Leadership. Qualities of leadership are very valuable an should be discovered and fostered. The natural leader ofte can be used to promote desirable classroom conditions wit benefit both to himself and to the others. A well-known stu dent of education tells of the following incident in his earl school experience. A certain boy had been giving considerabl trouble by disturbing the class. The teacher observed als that the boy's lead was followed by many of the others. Pun ishing seemed of no avail. The teacher then hit upon the ide of making the boy a marshal whose duty it was to see that th room was kept orderly. The boy took the responsibility wit pride and soon after led his former companion to the door b one ear, repeating on the way the teacher's old saying, "I seems to me there is a slight misunderstanding as to the purpos of this recitation." It is not recommended here that such dras tic use be made of leaders, but their ability can be utilized i more subtle ways for their own good and that of all othe concerned. Disciplinary problems often fade away when clas room leaders become interested in the work.

Neatness. The quality of neatness is perhaps more subje to training than shyness or leadership. Neatness—like its opp site, slovenliness—is a habit. The child becomes neat throug the habit of being neat, aided perhaps by observing neatness i

those round him. It is a mistake to assume that neatness can be obtained by scolding. The untidy person is no more to be blamed for his untidiness than for the color of his hair. The responsibility lies upon those who had charge of his training and failed to develop habits of neatness. As has been stated before, educational psychologists are beginning to tell us that neatness consists in many specific responses to situations rather than in a general habit of neatness. One investigator found that neatness in written work in one subject had little or no effect upon neatness in other work. Combing and brushing the hair is a habit by itself, and it does not follow that one who has developed ideals and habits with respect to combing his hair will keep his finger nails trimmed and cleaned. The latter is another specific habit and must be developed by itself. In other words, it is not safe to assume that neatness developed with respect to one activity will function in the others. It may be true, as Bagley suggests, that we can develop general ideals of neatness, but, after all, such ideals cannot function without many specific habits.

The matter of neatness is too important for the teacher to ignore. His method of obtaining it will of course depend upon the age of the pupils with whom he is dealing. The teacher in the upper grades or in the high school can generally accomplish the desired results by talking to the pupils individually about the importance of the matter. Grading the pupils for neatness or humiliating any of them before the class is both unpardonable and ineffective.

Coöperation. As civilization becomes more and more complex, tasks once accomplished by individuals working alone are more and more being turned over to large groups, each member completing but a small part of the total work. The cobbler at one time made an entire shoe, even tanning the leather for it. Today many hundred men often engage in the process of shoemaking. The failure of one man to coöperate may retard the

work of all. Hence the ability to coöperate takes on greater and greater importance as civilization advances. On the other hand, personality and individuality are important and must not be overlooked in the teaching process. A nation of men who are but cogs in a machine is undesirable. The individual, in the final analysis, represents the *summum bonum* of all combined effort. But the individual must learn to maintain his individuality and at the same time to coöperate with others for the good of all concerned. Tasks should be assigned in which coöperation is needed. Special care should be taken that those least willing to work with others are assigned to those tasks. Sometimes lessons of this type are effectively administered through athletics. If the individual cannot play on the team, he should at least be expected to lend his moral support. Getting the pupil interested in something larger than himself is a big step toward the ultimate goal of education. Such methods of dealing with beginning pupils as those proposed and used by Dr. Montessori have their greatest weakness in that they fail to provide properly for experience in coöperating with others.

Weakness of will. We are not to think of will as some faculty of the mind but rather as a generalized ideal with respect to the habit of reacting. This change of conception throws some light upon the possibilities of improving the will and the method of accomplishing this. The habits of carrying out our plans and of forgoing our desires are probably laid quite early in life. The child whose parents hasten to respond to his slightest whim, getting him everything for which he asks, is likely later to possess little self-restraint, which is one form of so-called will power. So also with the child who never finishes tasks, either those he undertakes by himself or those assigned him. A story has been told of a father whose little son came to him asking permission to use the father's hammer and saw for the purpose of making a sled. The child returned them a few minutes later, saying he did not want to complete the sled. The father

replied: "Son, you started to make a sled and I do not want to see you again until you have finished it." Children blessed with such a parent are not likely to be lacking in will power.

Temper. While temper undoubtedly has its background in innateness, the tendency to fits of rage is much enhanced or discouraged by the experience of the individual. Perhaps fits of rage have been allowed to bring satisfaction in the past. The teacher should see that they bring none now. The child should not be excused for acts committed during fits of rage.

Disobedience. Although disobedience may be owing entirely to the faults of earlier training, it is often provoked and fostered by the teacher himself. The teacher who says "There will be no whispering this morning" is flying into the face of the inevitable. There will be whispering, and he knows it. Then why make such a statement? Again, teachers often enter into heated discussions with pupils over disciplinary matters. The teacher should seldom if ever do this. While he must always keep individual traits in mind in disciplining, no matter of discipline should ever degenerate into a quarrel between the teacher and a pupil. The age of the pupils with whom the teacher is dealing must be taken into account in matters of obedience. It seems desirable to recommend that, in so far as is consistent with pupil self-government (and this should be encouraged to the extent of pupil capacity (see Lesson IX)), unquestioned obedience be demanded of children below the age of nine years; that from nine to about thirteen exactness be lessened as satisfactory group control is substituted; and that during the adolescent period obedience be largely a hearkening to the voice of the group rather than of the teacher. The teacher, in other words, in dealing with children of all ages should attempt to mold group opinion and, if possible, control the individual indirectly through this medium.

Honesty. The problem of developing honesty in pupils is one of the most serious which teachers of today have to face. Stu-

dents of psychology feel quite sure that it is largely a matter of training; that one is not born with especially inherited tendencies to steal, to lie, or to cheat. Since honesty, therefore, is a matter of training and since our more complex social and industrial life is causing the gradual slipping of home control, it becomes more and more important that teachers pay attention to the building of moral ideals and habits. As with the other social qualities, moral ideals and habits should be trained from early infancy. Frowning upon the undesirable and praising the desirable are very effective means of disposing the child to right ways of acting. A veteran educator once advised the writer, "Never hesitate to commend a good act in the presence of a child and never fail to condemn a bad one." Dishonesty should always be held to be low in the eyes of the teacher. In dealing with adolescents it is undoubtedly best to set up group ideals and then control the individual members by means of them. If the group will sanction petty stealing, little can be done by the teacher toward reforming any given member. If in high schools group opinion will not prevent cheating in examinations, there is little the teacher can do except to watch for the crook. This may prevent his cheating; but it will not develop his ideals or change his habits, and its effect is always demoralizing to the remainder of the class. Perhaps one of the most effective ways of dealing with the problem of dishonesty in high schools is that of assuming that one is dealing with ladies and gentlemen and then having a serious conference with one who proves to be otherwise. Of course such conferences must be private. The student's self-respect must be maintained if possible. He should be made to feel that this is a matter which the teacher would not expose for the world—something to be truly ashamed of. The writer believes this attitude on the part of the teacher to be more effective than that of a policeman.

GUIDE TO OBSERVATION AND REPORT

1. Note extremes of shyness and boldness.

2. Note instances of ability in leadership.

3. Note extremes in lack of neatness in person; in work.

4. Note lack of self-confidence or overconfidence.

5. Note ability to coöperate or lack of it.

6. Note instances of extreme determination or weakness of will.

7. Note cases of extreme temper.

8. Note instances of disobedience.

9. Note instances of dishonesty and deceit.

10. Note instances of poor sportsmanship.

11. Note instances in which personal desires are sacrificed to group desires.

12. Note pupils who while winning show undue personal satisfaction.

13. Note instances in which signs of poor sportsmanship are condemned on the part of an individual or the group as a whole.

14. Note instances in which pupils who are criticized constructively by the teacher, another pupil, or the group react as though their feelings had been hurt.

15. Note situations set by the teacher in which pupils are taught

1. To coöperate.
2. To carry on a discourse effectively.
3. To give due regard to the thoughts of others.
4. To make suggestion without giving offense to others.
5. To utilize criticism effectively.

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The following are sample reports of observations accompanying Lesson XII:

OBSERVER: XXX

SCHOOL: XXX

CLASS: History 11B

In general the class which I am observing appears to have come from homes better than average. All are neatly dressed and in general well groomed. Their English is for the most part above the average of that used in high schools. I have not noted at any time any indication of allegiances or prejudices which would in any way interfere with class discussion.

One of the pupils, Mildred, likes to be noticed and is causing some disturbance by making recitations that are not cogent and that border at times upon the ridiculous. She is a rather attractive girl and detracts somewhat from the class attention of the boys who are seated round her. I believe the girl to be somewhat sentimental and easily led by her likes and dislikes. As a teacher I shall try to win her good will and request in a conference with her that she try harder to refrain from disturbing the class.

The following pupils appear to have outstanding leadership ability: Mildred, Elgie, Fred, and George. Of these Elgie seems to surpass the others. He is a power for good or evil in the class. The pupils as a rule turn to listen when he recites, and when a

remark is made by another pupil those round him observe his reaction to it. Elgie, however, is worthy of their respect and seems to take no advantage of his position in any way to disturb the discipline of the room. Fred, on the contrary, appears to be inclined to stubbornness and individualism. Once he has made a statement he attempts to defend it regardless of the weakness of his case. "Even though vanquished he could argue still."

The incidents which I have observed would not justify my conclusion that there are any representative cases of extreme temper. This quality is better suppressed by the factor of social control at this age.

There were no instances of disobedience. However, Francis caused some disturbance. He twice or three times caused the teacher to pause for order. The disturbance caused by Mildred and John seemed to be due more to the play incentive than to any desire to disobey.

Grace is somewhat shy, though she has exceptional ability. Her reactions contrast strikingly with those of Mildred, who is bolder than the average.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9B

The class which I am observing comprises a very active and intelligent group of students. There are only three pupils who might be said to be a trifle shy. One of these is a little girl who is very untidy in the arrangement of her hair and dress. I believe, however, that she is unconscious of her lack of neatness, for she comes from a family which pays little attention to personal appearance. Another of the shy pupils is a large boy who is a senior in high school and who has some trouble with pronunciation. The other shy one is a rather large boy who is not very neat in appearance and who has a scared look on his face when he recites. There are none in the class who are bold. One girl is very good in her work, and she is always quick to see mistakes. She is the only one whom I should consider a leader. Most of the others are good

workers, but they seem to lack the initiative which is necessary in one who is to lead others.

Besides the two referred to above as being untidy in dress, there is still another—a little fellow whom I have spoken of before as seeming to disappear into the folds of his coat when he raises his shoulders. He seems never to be very clean, and his books are not kept in order on his desk. The little fellow is only twelve years old and therefore much advanced for his age. Those whom I referred to as being shy are the same ones I should say are lacking in self-confidence. Perhaps the shyness is due to this lack of confidence. None of them seems to be overconfident, as it is not likely a group of freshmen in high school would be. Every member of the class seems to coöperate with the teacher in the work directed by him, each student trying to do his or her best work. I believe this attitude is encouraged by the fact that there are so many bright students and they compete for first place. I have not noticed any instances of extreme decision, but there is one student who lacks determination. He is a little behind the others in the work, and no doubt he would be up with the class if he had the will power to stick to the job. There have been no examples of extreme temper or disobedience. The teacher seems to have good control of the group. There have been no instances of either dishonesty or deceit.

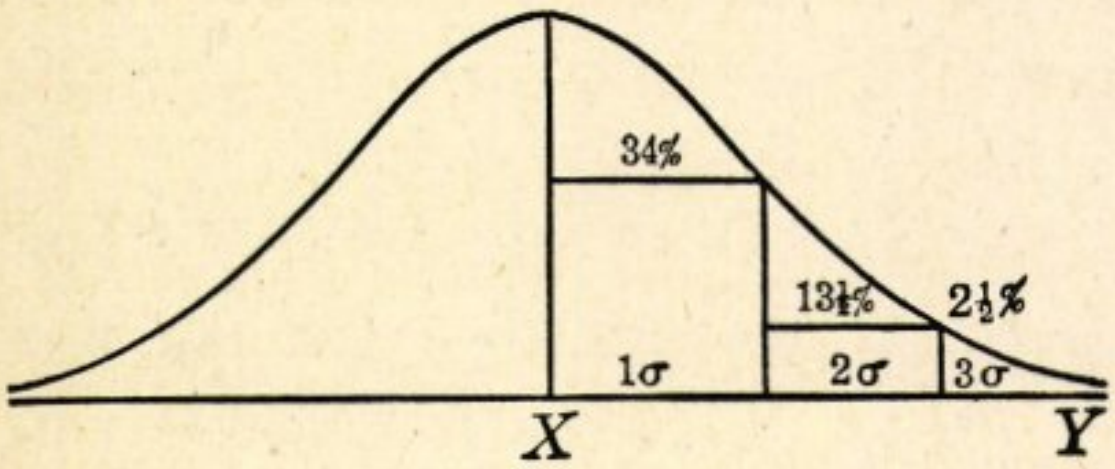
LESSON XIII

im. To appreciate the problem of individual differences with respect to brightness and dullness in general and to observe for degrees of brightness and dullness in the various members of the class.

Undoubtedly teachers have always observed the fact that upils differ in native ability, but it is only within the present entury that these differences have been measured and given pecial attention. We now expect the abilities of the individual nembers of the average class to differ according to a well-nown law which is expressed graphically by the curve of nor-nal distribution. This means that in any unselected group there re a few who are very poor; then the number at any level in-reases gradually until the peak in numbers is reached with the verage in quality; and after the median point the number at ny level decreases as quality rises, until at the point of highest uality the number of individuals is very small. Pupils are not ll mentally equal and should not be expected to accomplish qual amounts of work. Although the teacher knows this, it is n easy matter to forget all about it in the heat of school activi-ies and turn a piece of practical information into a merely nteresting statement.

Class teaching a new venture in schoolroom methods. Class eaching is a relatively new venture in schoolroom procedure. n the early days the teacher instructed each pupil separately. Hence each progressed according to the talent that he or she ossessed. As demand was made for the more thorough instruc-ion of all, the possibilities of mass instruction became more ttractive. The venture was first made by Lancaster and Bell

in the beginning of the nineteenth century. In its beginning class instruction took on a machinelike character in which al pupils of a given class were subjected to the same treatment The assumption was that if all had about the same schoo experience, they formed a class which was homogeneous with respect to ability to carry any given load. With this assumption in the background the pupils were put through the same course of treatment, then examined and labeled.



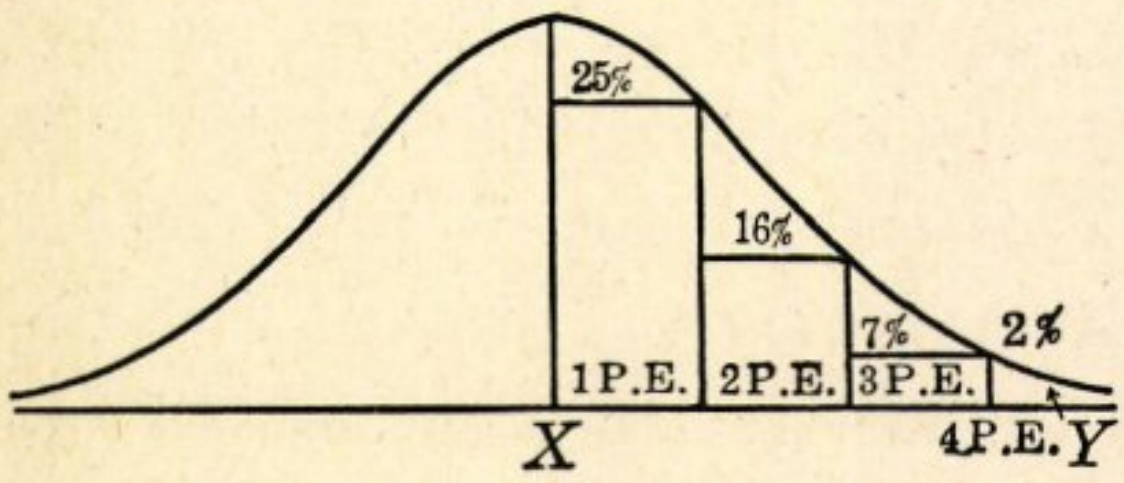


FIG. 18. Curves showing the Distribution of Ability and the Percentage of the Pupils which one may expect to find at Various Levels

Present movement back to individual. The present trend is back to the individual, but all the advantages of class instruction such as come through social training, group stimulation and simultaneous instruction, are being maintained The individual pupil is not to be lost sight of in the group. He is being studied and his abilities and needs are considered. The load is adjusted to his capacity The earlier type of class instruction adjusted the load to a convenient middle group and allowed the slow to be dragged along and the bright to remain idle a large part of the time.

Additional individual differences due to inherited special abilities. In addition to the individual differences which come from inherited general ability there are those which come from inherited special abilities. Here is the boy who seems able to draw anything he sees. He has had, as far as one can determine no more opportunity than another who can scarcely draw the simplest form so that one would recognize it. This difference

annot be accounted for on the basis of general intelligence, for oth might stand at approximately the same point if tested by a airly reliable intelligence test. One pupil likes literature; anther likes mathematics; another, Latin. One pupil may be nterested in going to college and another in learning a trade. Although it is difficult to say to just what extent inherited pecial abilities lie in the background of these interests and hese apparent special abilities, the fact remains that they are resent in every school situation, and provision must be made or them in any fully worked-out scheme of education.

Environment an important factor in individual differences. Although individual differences are largely inherited, the environment plays no small part. The apperceptive background may be so different in different members of the class as to form but little basis for a common approach to the lesson. In the words of Professor Nutt:

> The range of differences in training in any high school class is usually much greater than the teachers realize. The pupils in a freshman class, for example, may all have passed through the same elementary school and may have reached high school at practically the same age. Nevertheless they are not of equal training. In the first place, they come from home conditions that are widely different in the opportunities that they offer for experiences and training that are truly educative. One pupil may come from a home that is a luxurious mansion artistically designed and decorated, handsomely furnished, and supplied with books, magazines, beautiful pictures, and musical instruments. This individual has opportunity to read, to hear fine music, and to learn much through spontaneous experiences. He hears refined language, discussions of important life problems, and learns genteel manners that give him poise and dignity of bearing. Another pupil of this same group comes from a home that is very humble and almost wholly lacking in books, music, and other opportunities for spontaneous education. He hears crude language and little or no discussion of vital problems other than the primary ones of food and clothing. This individual spends hours in monotonous routine tasks that have long since ceased to interest and educate him.[1]

[1] H. W. Nutt, Principles of Teaching High School Pupils, pp. 123–124. The Century Co. Reprinted by permission.

Provisions for individual differences with respect to menta ability. Provisions for dealing with intellectual differences i the pupils may be divided into two classes; namely, administra tive provisions and classroom provisions. By administrativ provisions we mean such as affect the homogeneity of the group By classroom provisions we mean such as affect the individua members of any given group. To illustrate: dividing the pupil of any given grade into three classes,—slow, medium, bright,— each handled by a separate teacher, is an example of adminis trative provision; whereas giving extra work to the bright an only the fundamentals to the slow is an example of classroon provision.

Examples of administrative provisions for individual differ ences with respect to mental ability. One of the most noted o the administrative provisions for individual differences is tha known as the "Batavia plan," which puts two teachers int rooms with large numbers of pupils, one to conduct recitation and the other to give individual help. Rooms with the averag number of pupils have but one teacher, who gives part of th recitation period over to supervised study. The danger involve in this plan is that the helping teacher will give most of he attention to the weak pupils, neglecting the brighter.

The plan of frequent promotions has some virtues. Unde the old class method the failing pupil had to drop back an entir year. Some systems now promote pupils every ten or twelv weeks, thus giving the slower ones a chance to do their worl over again without great loss in time. The most serious defec in this plan is that the slower pupils sometimes are helped littl by being dragged twice at a too rapid pace over the same ground

A plan with much in its favor is that of grouping the pupil so that group one will complete the eight grades in seven years group two in eight years, and group three in nine years. Th main objection to this plan is that the work to be accomplishe becomes the unit of measure rather than the change produced i

he children. The maturing interests of the children are not aken fully into account. Some are advanced into secondary-chool work before reaching the adolescent period, and others re denied the social experience suited to adolescence owing o the fact that they have not as yet completed the common ranches. Since such a plan would necessitate twenty-four yearly rograms of study where we now have eight, the difficulty on he administrative side would be considerably increased. This night result in an overformalization of school work, with a esulting tendency to office rather than personal supervision.

The plan of dividing the pupils of any given grade into from hree to five groups so as to secure a maximum of homogeneity vith respect to mental ability has perhaps the most in its favor. The bright section does the work better, prepares more outside ssignments, does more project work, etc. The slowest section nay get the fundamentals only. The transfer of pupils from ne section to another can be accomplished without putting the upils with those younger or older. The maximum advantage f class instruction can be had, for the range of individual dif-erence has been greatly reduced. This plan, however, is not ossible in a school so small that there would be too few in any iven grade to provide full classes of more than one section.

The departmental plan provides very well for individual ifferences but has many objectionable features when applied elow the seventh grade. The most serious of the objections to he departmental plan in the lower grades is that it does not rovide for the mothering attentions which the young children eem to need. Then, too, they are not so capable as older pupils f providing themselves before each recitation with the proper aterial equipment. However, it may be argued on the other and that this practice and that of following their daily schedule re good training for them.

The pupil under the departmental plan can advance in one ubject and repeat another. This is a decided advantage. The

grade pupil who must lag in reading because of weakness i arithmetic is treated unjustly, yet often our lock-step organiza tion leaves no alternative. The departmental plan, howeve does not to any great extent, except in the case of elective sub jects, give greater homogeneity of either native ability or train ing. At least it does not provide for this as well as grad sectioning does.

Classroom provisions for dealing with individual differences Regardless of the efficiency of the administrative provisions fo individual differences there will still be a certain amount o variation in ability to be dealt with by the classroom teache Some will have considerably more native capacity than others Special work will have to be provided for the brighter pupils and extra attention will be necessary for the slow. There wi still be the special abilities that should be brought out. John who seems to have special ability in drawing and who will draw most of the time if not suppressed, is a problem for the teache Although the others must not be neglected, use for John's draw ing should be found, and he should be given credit for his bes productions. The teacher must be on the lookout for thos special gifts. They are precious both to John and to society.

Provision for individual differences through assignments. I is possible for the classroom teacher to vary the extra assign ments so as to give the capable pupils more work. In mathe matics this may mean additional and more difficult problems in history, outside readings and reports. The more able pup may often with profit be assigned to the task of aiding th weaker. The attempt to explain material to another is ofte the surest way of grasping the full significance of it onesel This method, however, will need to be used with care so a not thereby to prevent the brighter pupils from extending th horizon of their own knowledge. Then, too, the weaker pup may need the skilled leadership of the teacher rather than th unskilled help of his neighbor.

Provision for individual differences through conferences. In
ıe carrying out of the conference plan the teacher remains for
time after school, arrives at the school early, or, in the case of
epartmental teaching, sets aside a vacant period for the pur-
ose of meeting pupils who need help (this should as often in-
ude the strong as the weak). So important is this type of
upervision that schools have been known to set aside a class
eriod once each week, or even once each day, to add to the
acher's opportunities to meet each pupil in an informal con-
erence. In the operation of the conference plan it seems
dvisable to recommend that both appointed and unappointed
onferences be held. If the teacher sees only those whom he
as designated, many who should confer with him and who also
ish to do so will be neglected. As a disciplinary device the
ppointed conference has something to recommend it. On this
oint Hall-Quest has the following to say:

> Weak pupils are asked to confer with the teacher or the principal for
> rious reasons. The request itself may savor of some penalty. There
> a presumption at the outset that the pupil has failed to meet require-
> ents. Bad news travels fast and it does not infrequently happen that
> e pupils whisper the news abroad that so and so "had to see the prin-
> al or teacher today." Trivial as this may seem, it nevertheless de-
> rves consideration in dealing with high school people. Appointments
> ould be made inconspicuously. Although they may be necessary for
> sciplinary reasons, this fact should be minimized at first. Discipline
> be effective must rest on facts carefully and justly obtained.[1]

Conduct of the conference. To be most effective the confer-
ce must be systematically arranged by the teacher. In case
e conference is by appointment initiated by the teacher, notes
ould be made at that time as to the aims of the meeting. The
me should be definitely set and the pupil expected to be there.
though the teacher should handle the pupil's problems with

[1] A. L. Hall-Quest, Supervised Study, pp. 99–100. The Macmillan Com-
ny. Reprinted by permission.

dispatch, it is well to show a little friendly interest in his gener well-being. Often in this way the teacher can bring the reb lious pupil to take an interest in his work. There is no bett way of improving the teacher's influence with the class th through individual conferences with the members.

Rynearson, writing in *School Review*, Vol. XX, gives t following advantages of conferences:

1. It affords a practical and efficient means of helping the first-ye pupil to keep up to grade.

2. It combines happily the class and individual methods of teachi

3. It serves the useful purpose of a general "clearing-house" peri for review, drill, discussion of obscure principles, and for personal wo with the individual pupil.

4. The pupil understands that he can display his ignorance with ho of enlightenment and no fear of a poor grade for so doing.

5. Through intimate personal contact it stimulates a feeling of mutu sympathy and helpfulness between teacher and pupil, and obviat largely the necessity of keeping children after school to make up wo

Provision for individual differences through study coac

Hall-Quest divides study coaching into two kinds; namely, th conducted by the unassigned teacher, and that conducted by t general study coach. The former plan was developed by Supe intendent Spaulding while at Newton, Massachusetts. The u of the unassigned-teacher plan requires an extra teacher and room large enough to seat at least twenty pupils. Classroo teachers, with small groups of pupils having special difficu in mastering parts of the lesson, assign them in a body, alo with a statement of their needs, to the unassigned teach She may work with them for an entire period and, if need perhaps again on the following day. So throughout the ent day the unassigned teacher works with groups or individu that have been sent to her by the regular classroom teache The administration of such assignments would necessarily upon the principal. Otherwise there would be friction amo

the teachers, and between them and the unassigned teacher. Hall-Quest recommends that exchange cards pass between teacher and coach both upon sending and returning pupils.

The plan of the general study coach differs from that of the unassigned teacher in being more individual and less formal. The pupils, upon their own initiative, go to the coach for help. Many objections can be raised against this form of supervision. In the first place, it does not assure us that the pupils who can profit most by help will be those who receive it. There is also some likelihood that a few of the conferences would degenerate into mere social visits. The objection that one person can hardly be expected to be able profitably to help in all the subjects taught is as valid here as in the case of the large assembly hall and the one teacher supervisor. Such a person would need special preparation for this work.

Hall-Quest makes the following suggestions to study coaches:

1. Address the pupil kindly with a smile, with a friendly grip of the hand.

2. Ask him to be frank in stating the difficulty. All he says will be regarded as *absolutely confidential.*

3. Ascertain as many details as possible bearing on the pupil's general attitude toward the subject.

4. Begin the actual coaching by requiring the pupil to read the problem slowly with proper emphasis on important words. Then set him to work as much of the problem as he can.

5. When the pupil reaches the difficulty, analyze the situation carefully for the *reason* of the difficulty. It has a reason—an important psychological one. Use analogies from common day experience. Attack the difficulty by appealing to senses other than sight. Use manual construction if possible. Use blackboard together with the pupil. Shift the angle of attack until the pupil says, "I see it!" If after many trials he cannot "see it," then tell him what to do.

6. Prevent wasteful energy and time by stopping the pupil as soon as he has begun a wrong procedure. The factor of independence is provided for in requiring a reason for every step taken and at point of difficulty stating reasons for attempting this or that next step.

7. If there is a group of pupils facing the same difficulty, all of them should be given opportunity to state reasons for processes employed in the solution of the problem.

8. Do not work any problem for the pupil. He must do all the work under tactful suggestion by questions. But when absolutely necessary, supply information.

9. Make a record of the difficulties encountered, number of visits made by each pupil, amount of coaching for the same kind of difficulty.[1]

GUIDE TO OBSERVATION AND REPORT

1. Where possible obtain records relative to age of pupils and divide them into three groups: retarded, normal, and accelerated. This should be done before class observation.

2. Study the lists prepared under 1 so as to be able to tell without reference to the paper to which group any given child belongs.

3. Observe for recitations showing insight and original thinking on the part of individual members of the class. List the pupils who made such recitations.

4. Do those listed under 3 continue interest in the class discussion, or does their attention shift to something else?

5. Note any instances of apparent inability to give prolonged attention. List the pupils who seem to fail in this respect.

6. In your judgment is the failure of individual members listed under 5 due to dullness of the pupil or to ability not utilized by the teacher?

7. Note instances of continuous lack of interest.

8. Make a judgment on each retarded pupil, stating whether retardation is due largely to dullness or to environmental reasons.

9. Note instances in which the teacher allows for individual differences. Does she give extra work to the brighter pupils? Are they encouraged to take the initiative in class?

10. Note any attempt to group for instructional purposes the pupils of similar ability.

[1] A. L. Hall-Quest, Supervised Study, pp. 111–112. The Macmillan Company. Reprinted by permission.

The following are sample reports of observations accompanying Lesson XIII:

OBSERVER: XXX

SCHOOL: XXX

CLASS: History 11A

1. The following is a classification of the pupils on the basis of age:

NAME	BIRTH	AGE	GRADE
Robert A.	July 14, 1908	16	11
Marjorie	May 15, 1908	16	11
Dorothy	February 11, 1908	16	11
Robert B.	October 14,. 1907	17	11
Ellsworth	September 21, 1907	17	11
Olive	August 1, 1907	17	11
Joseph	November 26, 1907	17	11
Elizabeth	May 1, 1907	17	11
John	March 13, 1907	17	11
Albertus	January 13, 1907	17	11
Jean	July 17, 1907	17	11
Margaret	July 12, 1907	17	11
Wilbur	February 14, 1907	17	11
Julia	May 13, 1907	17	11
Paul	November 19, 1907	17	11
Albert	May 10, 1906	18	11
Mary	April 9, 1906	18	11
Christine	July 14, 1906	18	11

Robert A., Marjorie, and Dorothy are accelerated one year in each case.

Christine, Mary, and Albert are retarded one year each.

2. The following individuals showed exceptional insight into classroom problems:

Marjorie	Julia	Paul
Dorothy	Elizabeth	

3. The following pupils were somewhat indifferent:

Jean	Albertus	Joseph
Olive	Albert	Mary

4. The following pupils seemed unable to give prolonged attention:

Christine	Olive	Mary

5. I believe that neither Christine nor Olive is a dull pupil, but their ability was not fully utilized by the teacher.

6. The following pupils listed under 3 appear comparatively dull:

Albert	Albertus	Joseph	Mary

The apparent indifference of Olive and Jean is due largely to environment.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra

The following is a classification of the pupils on the basis of age:

NAME	AGE	GRADE
Ethan	12	9
Helen	13	9
Winona	14	9
Mary B.	14	9
Miriam	14	9
Wallace	14	9
Bettina	14	9
Lucille	14	9
Mary D.	14	9
Vera	14	9
Serena	15	9
Lois	15	9
Dale	15	9
Mary P.	15	9
Edna	15	9
Jack	16	9

NAME	AGE	GRADE
Joseph	16	9
Faye	16	9
Gaynelle	16	9
Vernon	16	9
Burton	17	11

Serena, Lois, Dale, Mary P., and Edna are retarded one year. Jack, Joseph, Faye, Gaynelle, and Vernon are each retarded two years.

Ethan and Helen are accelerated two years and one year respectively.

The following pupils showed insight and original thinking in recitation: Helen, Mary B., Bettina, Vera, and Lucille. The above pupils give almost undivided attention to discussion in class.

The following pupils seem to be unable to give prolonged attention: Vernon, Joseph, Edna, and Jack. I believe that these students are not dull, but that something must be done to hold their attention. Vernon and Joseph appear intelligent enough, but they also appear to be rather shiftless or nervous and not able to attend to the discussion with ease. Edna and Jack are a little dull and do not seem to be able to attend easily. There are none in the class who seem continually to lack interest in the work. The only possible exception would be Vernon.

Of the five students I have listed as retarded one year Edna is probably the only one who is really retarded. Perhaps the others will not be sixteen years old until the middle of their sophomore year and consequently they would graduate when they are eighteen, which is the normal age. Of those whom I have listed as two years retarded I know very little of their home life. I do know that Gaynelle was very ill for more than a year and was forced to withdraw from school. She is a very bright girl, and only her illness could have retarded her. Jack, Joseph, and Vernon are of the type of boy who is just naturally slow in some subjects and doesn't worry much about it. No doubt Joseph and Vernon have more than freshman rating and are repeating this course. Faye seems to be quick to see things and seems to get along well in the work. I cannot understand why she is retarded.

The teacher of this class seems to pay no attention to individual differences. The same assignment is given to all the pupils. One

day when he gave the advance assignment he discovered that some of the best students already had that lesson prepared. Instead of giving those students some extra or advance work he told them to use the study hour as they pleased. Those students were ready to go on, and it was wasting their time for them to wait for the slower ones. The teacher could provide for these students by giving them extra work not in the text, thereby keeping them interested.

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LESSON XIV

Aim. *To become acquainted with the instructional equipment to which the student is later to have access in teaching and to obtain an understanding of the equipment necessary in the classroom or laboratory.*

Recitation room (nonlaboratory subjects). The instructional equipment needed in a recitation room will of course vary with the type of work which is going on there. If the reading-room is well equipped (assuming that pupils study in one room and recite in another) the reference material in the recitation room may be reduced to a minimum. This minimum should consist of such reference books as classroom discussions are likely to bring into requisition. In the case of English classes this may well include, in addition to a set of maps, an encyclopedia and an unabridged dictionary. An encyclopedia from which pronunciation may be obtained is, other things being equal, much to be preferred. Classes in which mathematics is being taught should contain such mathematical equipment as compasses, yard and meter sticks, and models. And so through the list of subjects taught. Each will call for special classroom equipment.

Recitation room (laboratory subjects). Recitation rooms in which physics, chemistry, biology, domestic science, or agriculture is being taught should be equipped so as to make it possible to carry out experimental demonstrations before the class. In such classes raised seats are to be preferred, as they will greatly aid pupils in viewing the demonstration. The seats should be provided with writing supports of suitable size to enable the pupils to write and draw freely during the class demonstration or lectures. The demonstration desk may or may not contain

a sink with a water tap. In general it is to be recommended especially in the case of chemistry, biology, and domestic science that these fixtures be attached to the desk. Water is so seldom used in the demonstrations in other laboratory classes that a tap near the demonstration desk will suffice. A storage cabinet just behind the instructor's desk will save much running back and forth to the storeroom for materials. Fig. 19 represents an instructor's desk suitable for both physics and chemistry.

The student should look for the following particulars in the desk of an instructor in physics:

1. The top should be of hard, close-grained wood or other material suitable to withstand ordinary mechanical pressure.
2. The desk should contain a sink with a water tap, also gas and electric fixtures if gas and electricity are available.
3. It should contain roomy drawers and cupboards, which should be fitted with locks.
4. A toe space enables the instructor to stand near the desk while working.
5. Mercury sink is desirable, though not a necessity.
6. Sink covers are desirable.
7. One fireproof cupboard is desirable.
8. The desk should be supplied with uprights and an adjustable crossbar.
9. The desk should contain a drawer about five feet in length, in which glass tubing may be kept. This drawer should be so divided that tubes of various sizes may be separated.

The student should look for the following features in the desk of an instructor in chemistry:

1. The top should be of hard, close-grained wood, preferably birch properly oiled and treated, or of soapstone or other material suitable to withstand chemical action or ordinary mechanical pressure. A top of very hard material, say cement, would cause undue breakage.
2. The desk should contain a sink with a water tap, also gas and electric fixtures if gas and electricity are to be had.
3. It should contain roomy drawers and cupboards, which should be supplied with locks.

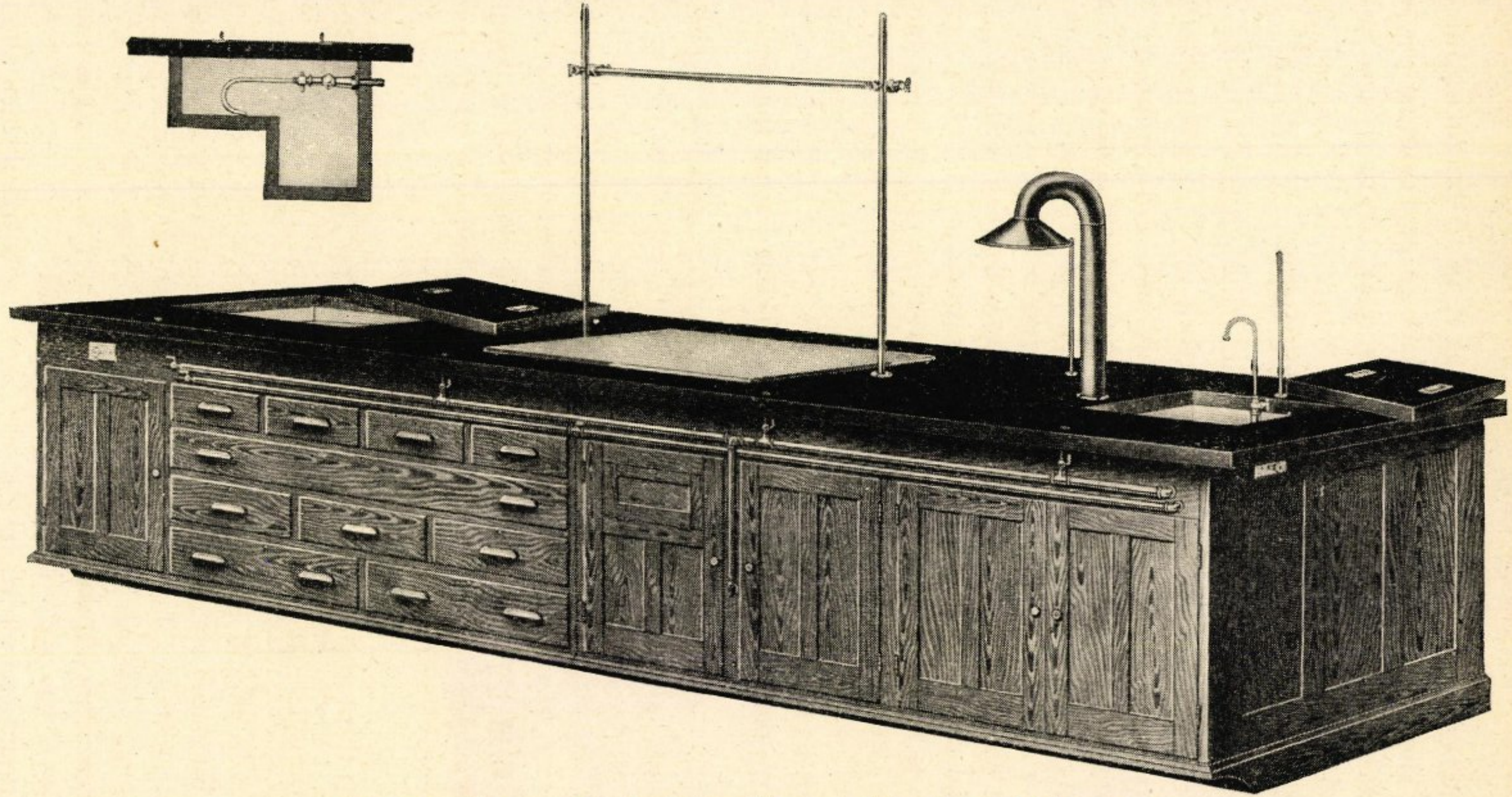


FIG. 19. Instructor's Desk for Classes in Physics and Chemistry

4. A hood adjustable as to height is desirable if suction can be main tained. The hood should be removable. A cover should be present, s that when the hood is removed the opening in the top of the desk ma be closed.

5. A toe space enables the instructor to stand near the desk whil working.

6. A mercury sink is desirable, though not a necessity.

7. Sink covers are very desirable if the desk is used by a physics in structor also. They give the advantage of more table space.

8. An asbestos pad is desirable for the protection of the top in th immediate vicinity of the demonstration and for the support of furnaces

9. A wire-glass shield may be used to protect pupils in the front row from the effects of sputtering chemicals in demonstrations.

10. The desk should contain a drawer about five feet in length, i which glass tubing may be kept. This drawer should be so divided tha tubes of various sizes may be separated.

A. Ashmun Kelly[1] speaks as follows on the matter of treatin table tops for use in the chemistry laboratory or lecture room

Owing to the fact that glass vessels and other breakable things are i constant use on the laboratory table it is not expedient to use marble slate, glass, or other hard surface, wood alone answering the purpose But wood becomes badly disfigured in a short time, from the spilling o the different chemicals on it so that it becomes necessary to renovate i frequently, or seek some sort of coating for it that will be immune t the action of chemicals. Such a treatment has been discovered. Here i the formula and method:

Solution No. 1

Copper sulphate	50 grams
Potassium chlorate	40 grams
Water, q.s.	500 cc.

Solution No. 2

Aniline hydrochloride	50 grams
Ammonium chloride	40 grams
Water, q.s.	500 cc.

[1] The Expert Wood Finisher, pp. 201–202. J. F. Tapley Company. Re printed with permission.

Solution No. 3

Potassium bichromate	50 grams
Water, q.s.	500 cc.

Solution No. 4

Sodium sulphite	80 grams
Sulphuric acid	20 cc.
Water, q.s.	500 cc.

Solution No. 5

Soap suds

These solutions are to be applied in the following order: Nos. 1, 2, 1, 2, 3, 4, 3, 4, and 5. But be sure that one coat is perfectly dry before you apply the next coat. This is very important. The liquids are applied with a bristle brush, like a water stain, allowing the wood to absorb all of each coating that it will take up, in order to make the work more effectual and lasting. The soap suds fix the color, which is intensified by the sulphuric acid. After the soap solution is dry the surface is rubbed with vaseline, which gives a soft and pleasing finish, besides repelling water. The treatment involves a great deal of hard rubbing and time, but the work is well worth the time and trouble, and the expense, outside of the labor, is small.[1]

Fig. 20 represents an instructor's desk suitable for the biology classroom.

The student should look for the following particulars in the desk of an instructor in biology:

1. The desk should contain cupboards and drawers that afford convenient storage room.
2. The desk should contain a water tap and sink.
3. An aquarium is a very necessary adjunct to a laboratory in the maintenance of healthy specimens. However, it may be placed elsewhere than upon the desk.
4. Toe space is desirable (see Fig. 20).
5. It should be possible to lock all cupboards and drawers.

[1] Raw linseed oil may be used in the place of vaseline but should be well rubbed off a few minutes after application. Tables in use should be treated once each year.

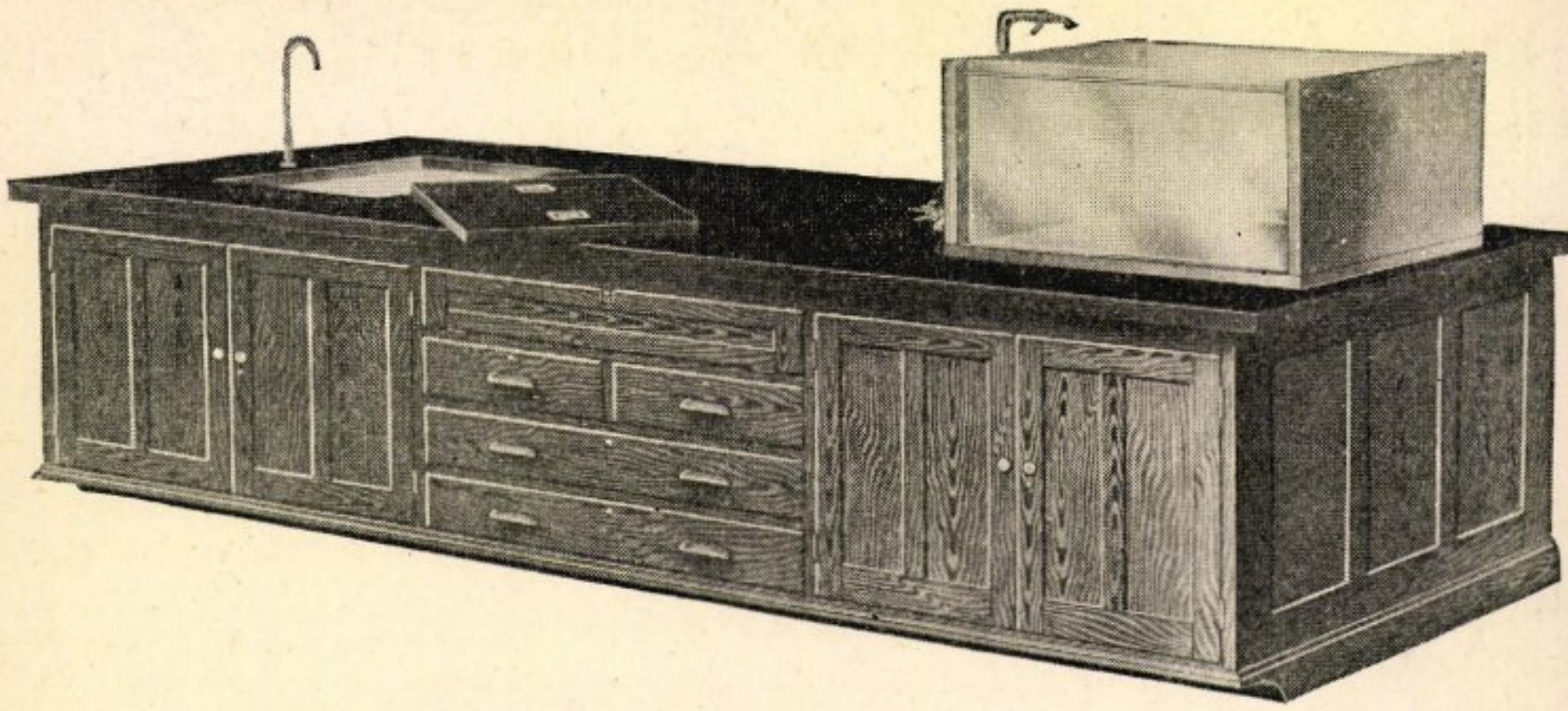


FIG. 20. Instructor's Desk for Classes in Biology

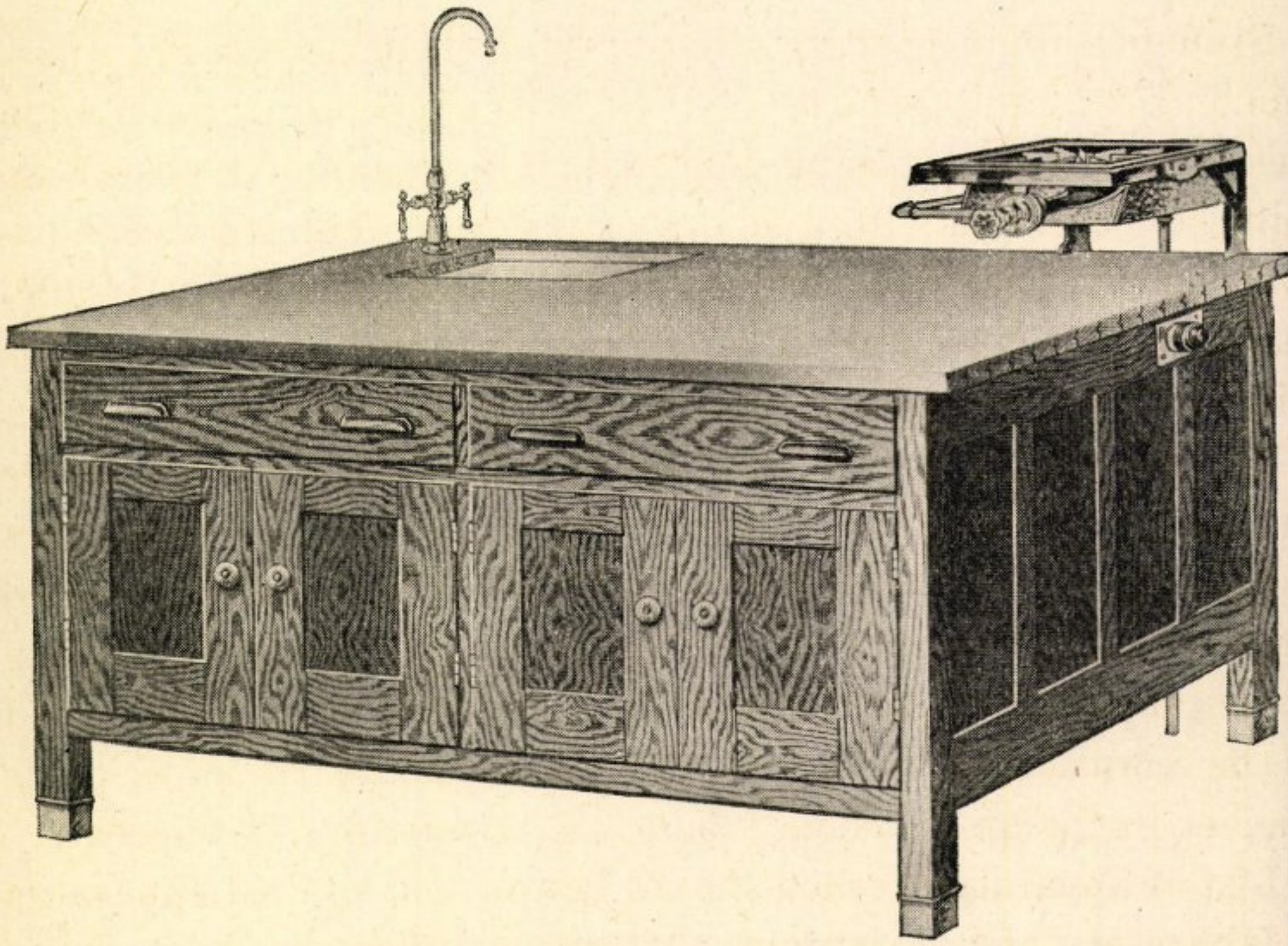


FIG. 21. Instructor's Desk for Classes in Domestic Science

6. The desk should contain a drawer about five feet in length, in which glass tubing may be kept.

7. Swinging doors are preferable to sliding doors, since the latter have a tendency to stick.

Fig. 21 represents a desirable desk for a domestic-science instructor.

The student should look for the following features in the esk of an instructor in domestic science:

1. Roomy drawers and cupboards.
2. A gas or electric stove if gas or electricity is available.
3. An electric socket.
4. Sink with a water tap.
5. Both hot and cold water.
6. Swinging doors are preferable to sliding doors, since the latter have tendency to stick.

Laboratory

Student should prepare a list of equipment necessary. Inasuch as the equipment needed will vary, depending much upon he manual that is being followed, it is impossible to set up inimum essentials for a laboratory course. The student, howver, should study the extent to which the equipment is adeuate to the requirements of the manual used. Some manuals ill contain a list of the apparatus needed, whereas for others will be necessary to go through the experiments and compile he list. This task is complicated by the fact that instructors sually omit a few experiments and add others. For this reason he student in working out this lesson should sit down with the structor and list the experiments to be used; then, with the aid f the manual and perhaps further aid of the instructor or critic eacher in charge, he should determine the equipment needed.

List of apparatus needed should be checked against apparatus laboratory and storeroom. After the student has compiled a st of the apparatus needed, the next task is that of surveying he laboratory and storeroom to determine the presence and ondition of the apparatus available. While the student is hecking over the apparatus, he should attempt to fix in mind he location of each piece. This will save considerable time hen the student later has the task of setting up apparatus for ass demonstration or has charge of a laboratory period.

Size, construction, and arrangement of laboratory table

Size, construction, and arrangement of laboratory tables for
an important item of observation. It is here that the pupils d
much of their real work. Conditions that would entirely sli
the attention of any but the skilled observer may seriousl
handicap the pupils at work.

Lighting is a very important consideration in all laboratorie
In the first place, the light should enter the room from one sid

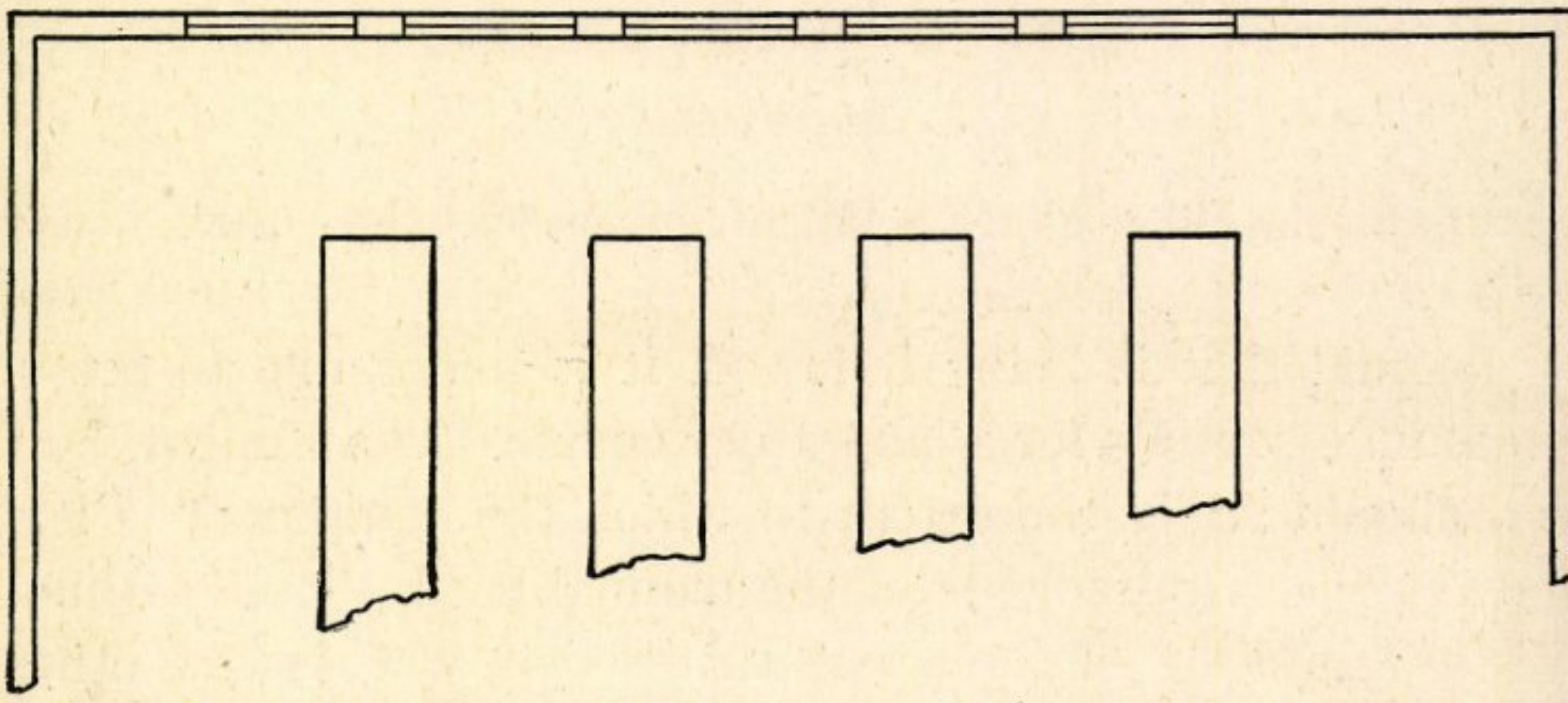


FIG. 22. Proper Arrangement of Laboratory Tables with Respect to Lighti

Pupils should work on the sides of the tables which allow the major part of the lig
rays to fall upon the work from the left and rear

only. That side, however, should have considerable windo
space, so as to flood the room with an abundance of light.
north room is preferable because of the ill effects of the dire
rays of the sun, especially when microscopes are being use
The arrangement of the tables with respect to the source of lig
also is an important item. The tables should be so placed th
the long side projects away from the windows. This will pr
vent one pupil's working in the light of another. Lloyd ar
Bigelow recommend V-shaped tables for biology, the narro
end being farthest from the windows. The main objection
this is that if the narrow end is wide enough the other end is t
wide. Hence the extra expense would make such an arrang
ment undesirable. Fig. 22 shows a proper lighting condition.

Physics. The tables in a physics laboratory should be from
ree and one-half to four feet in width. This size will permit
upils to work on both sides and allow room for bulky appara-
s between them. Each pupil should have three feet of lateral
ace. Six pupils should have a table at least nine feet in length,

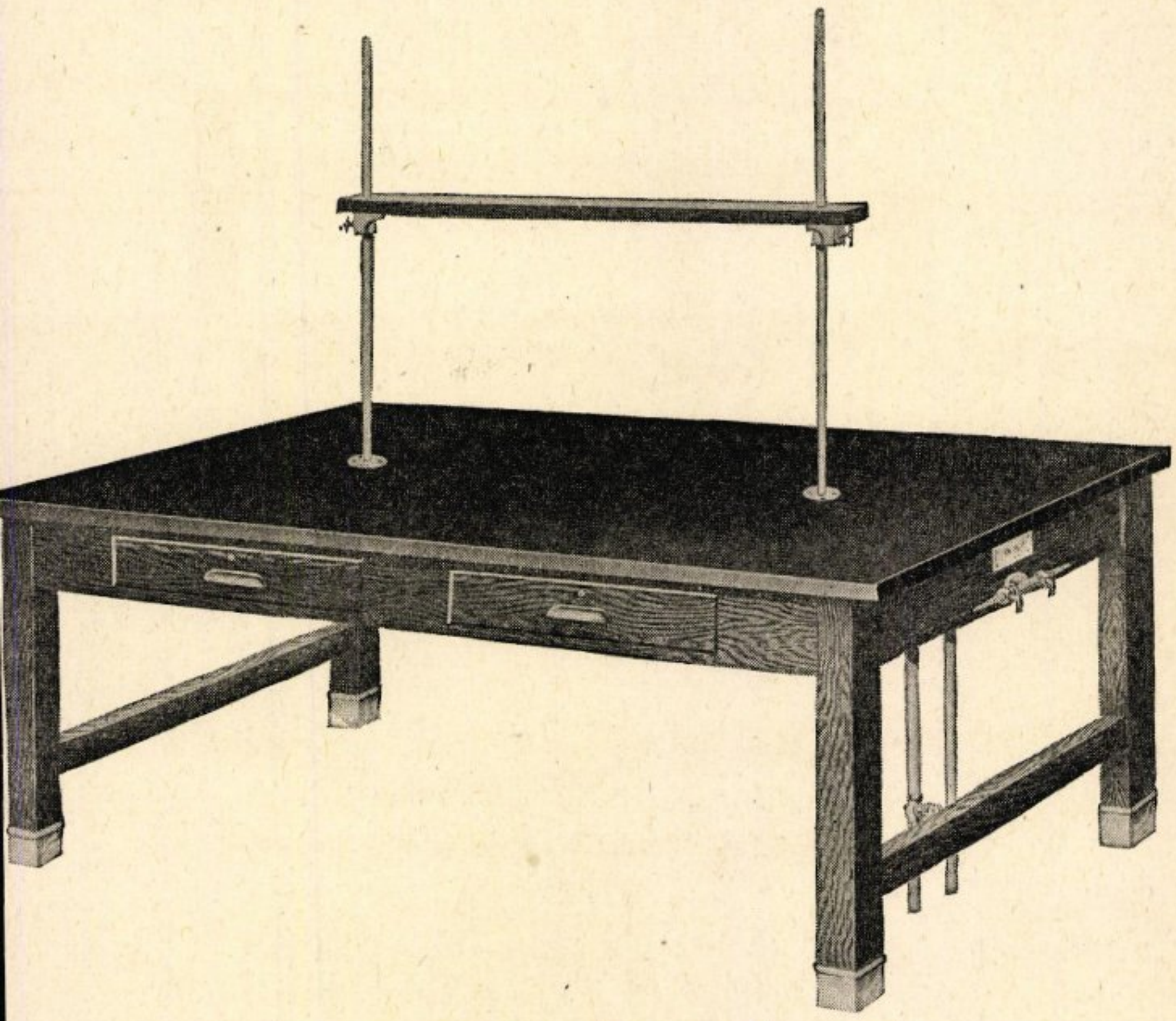


FIG. 23. Table for Physics Laboratory

ree working on a side. The tables should be from thirty to
irty-six inches in height. It is an advantage to have them
varying height so that one may adjust the height of the
ble to the pupil. Each table should contain supports and a
ossbar. The crossbar should be so attached that it may be
adily adjusted as to height. Tables should contain gas and
ectric fixtures. It is very desirable that these be attached to
e end of the table rather than to the top. Fig. 23 represents
suitable table for a physics laboratory.

The student should look for the following desirable featur in a physics-laboratory table:

1. The table should be provided with uprights and adjustable crossb
2. Gas and electric fixtures should be present, if gas and electrici are available.
3. A drawer with lock and key is desirable for each student.
4. Note width and height of each table.



FIG. 24. Student's Table for Chemistry Laboratory

5. Determine the amount of working-space allowed for each pu and compare with that mentioned above as being desirable.
6. Crossbar should be provided with means for attaching such a paratus as spring balances.
7. Table top should be of hard, close-grained wood or other mater suitable for resisting ordinary mechanical pressure.

Chemistry. Fig. 24 represents a desirable laboratory table f chemistry.

The student should look for the following features in chemistry-laboratory table:

1. Roomy drawers and cupboards (these should be fitted with lock
2. A sink with a water tap should be within convenient reach of ea pupil.

3. There should be one gas cock for each pupil, so located that it can e used conveniently when it is needed.

4. The table should contain shelves for reagent bottles, supported by prights from the middle of the table if both sides are used.

5. There should be toe space at the bottom of the table.

6. The top should be of hard, close-grained wood, properly oiled and tained, or of soapstone or other material suitable to withstand chemical ction or ordinary mechanical pressure. Such materials as cement are oo hard and would cause undue breakage.

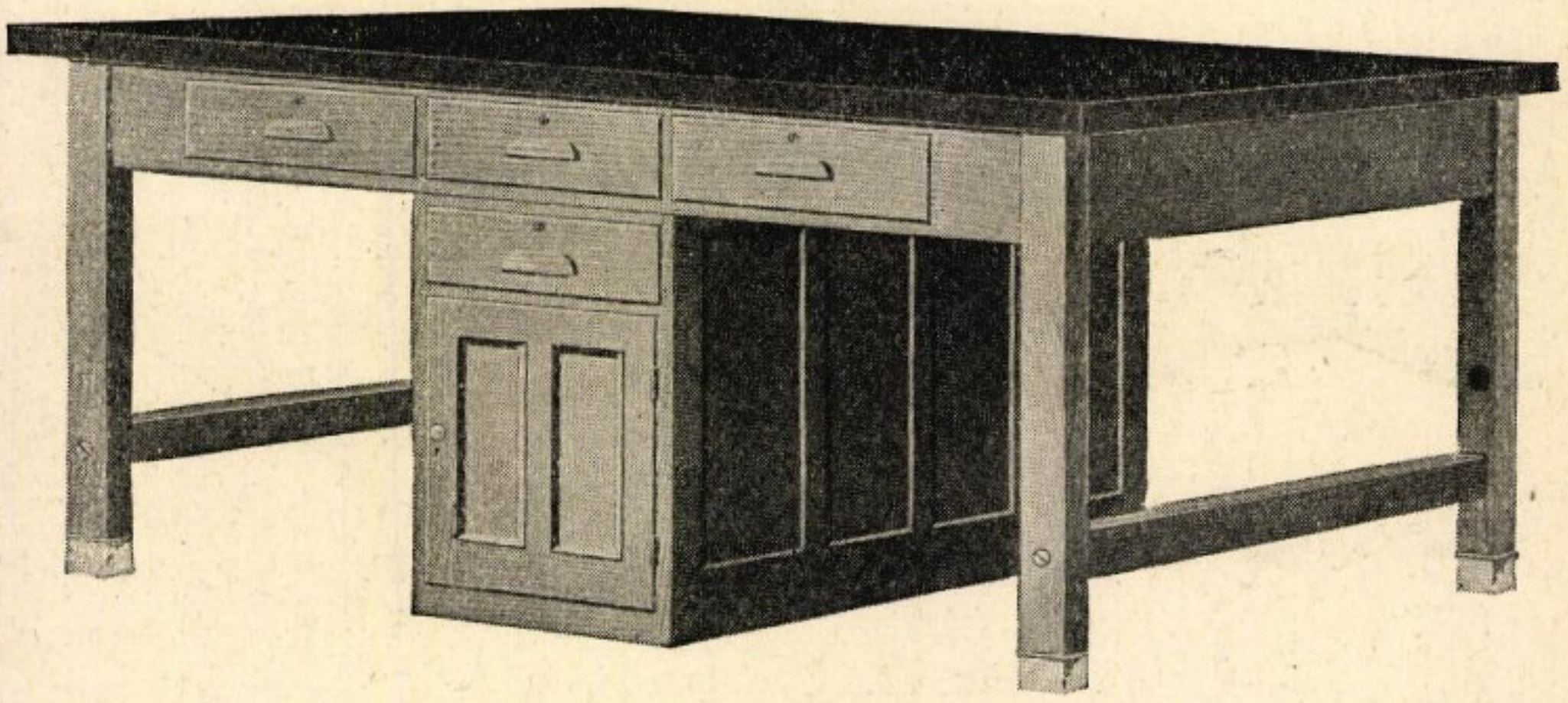


FIG. 25. Student's Table for Biology or Agriculture

Biology and agriculture. Fig. 25 represents a table suitable o the needs of the biology or agriculture laboratory. Such table will accommodate conveniently eight pupils working in roups of four.

The student should look for the following items in a iology-laboratory table:

1. A drawer with lock and key for each pupil.

2. A large cupboard in which to keep materials that are used in common y the pupils. In case cupboards are omitted wall cabinets may be used.

3. The table top should be of hard, close-grained wood, suitably oiled nd stained, or of other material of such nature as to withstand chemical ction or ordinary mechanical pressure.

4. The student should observe the construction of the table with re- pect to durability.

5. Swinging doors are preferable to sliding doors, since the latter have tendency to stick.

Home economics. Fig. 26 represents a well-equipped tabl for domestic science. Such a table will accommodate four pupil working at a time. Notice the large cupboard.

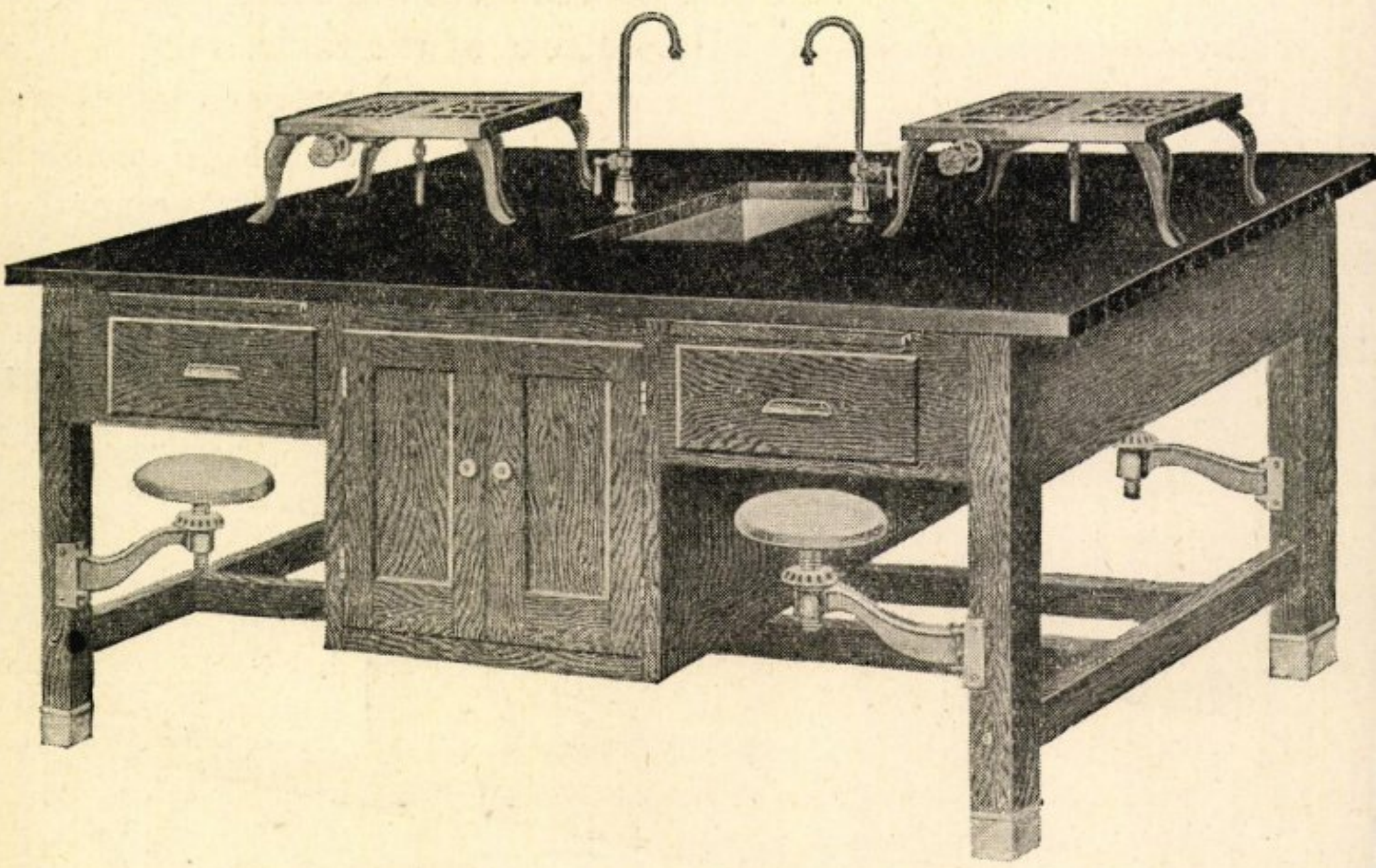


FIG. 26. Cooking-Table

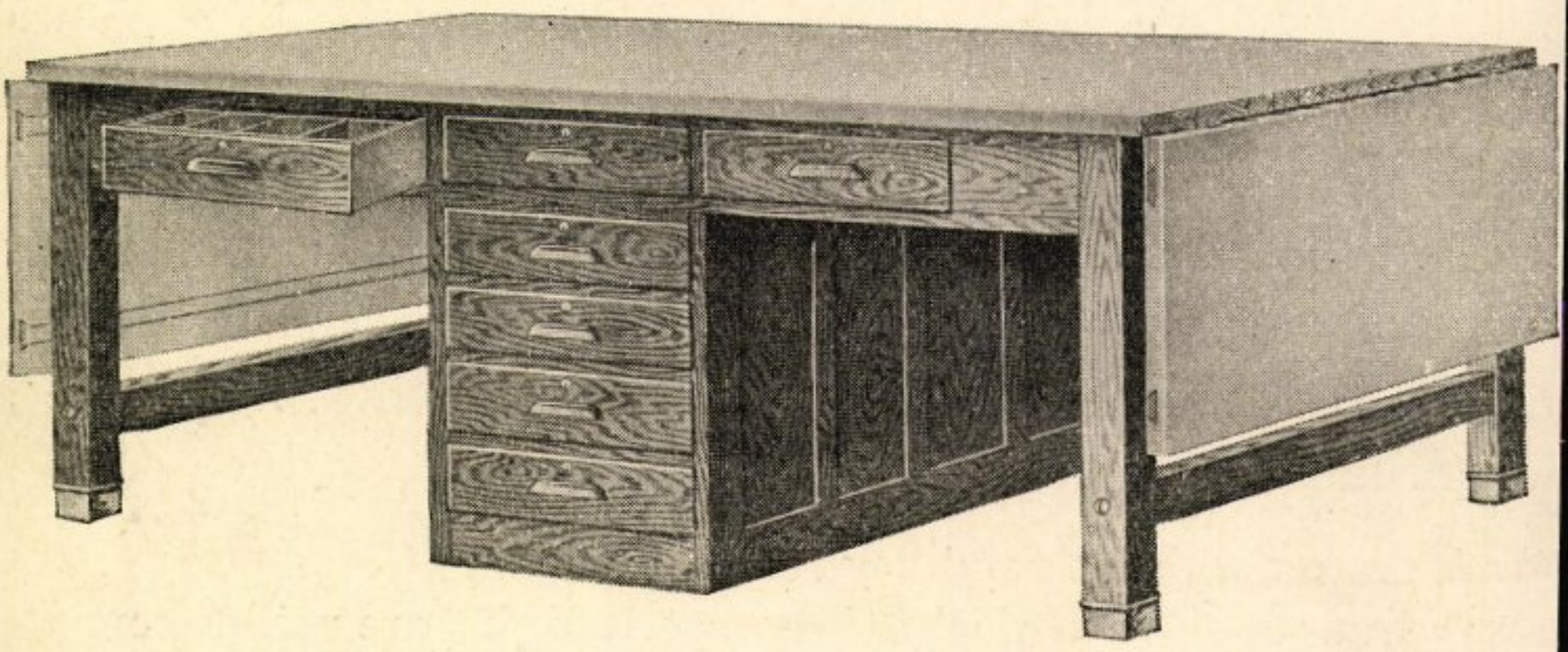


FIG. 27. Sewing-Table

The student should look for the following particulars in table for domestic science:

1. The table should be equipped with gas or electric stoves if gas electricity is available.
2. The table should contain roomy drawers and cupboards.

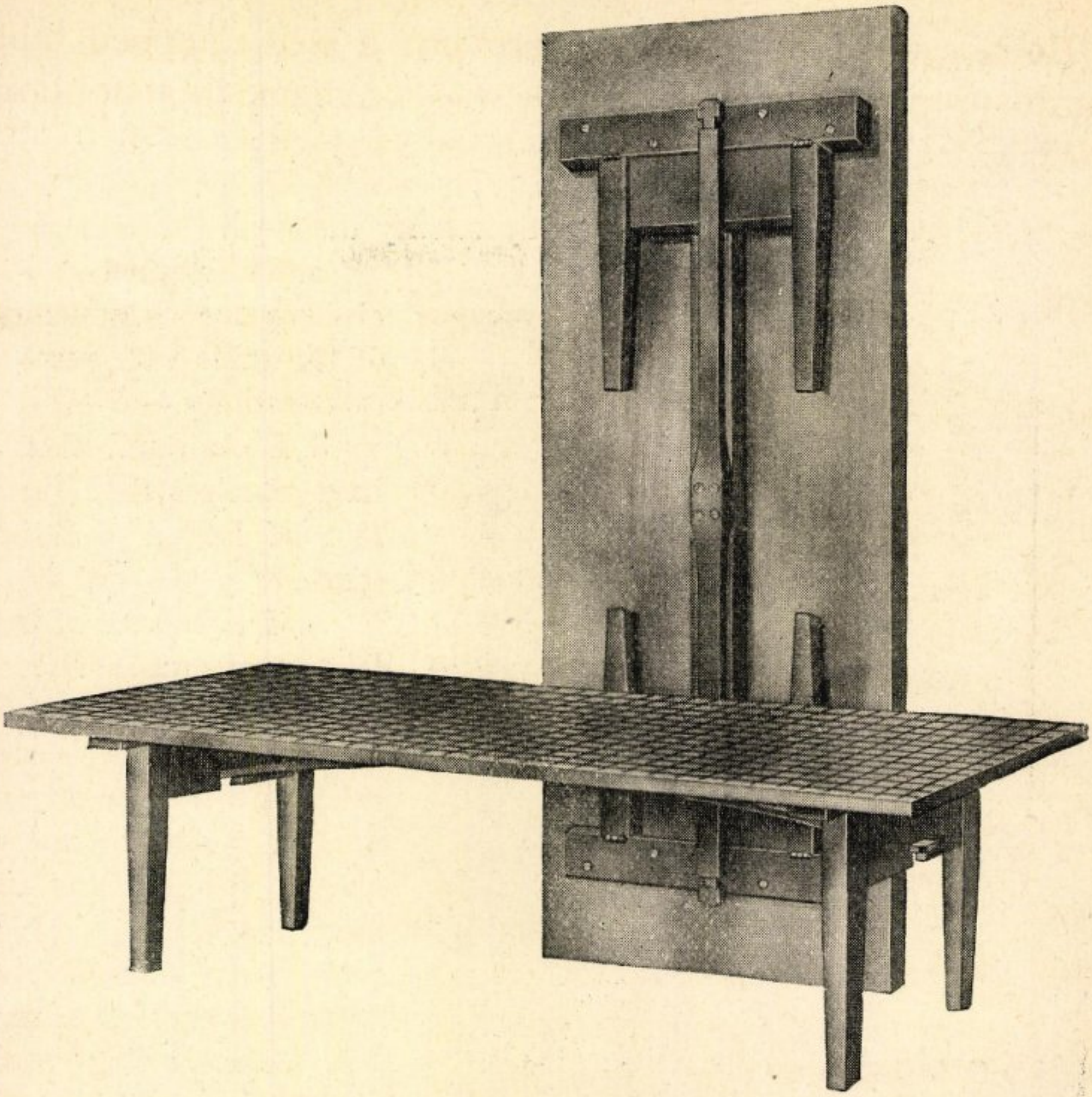


FIG. 28. Kindergarten Table

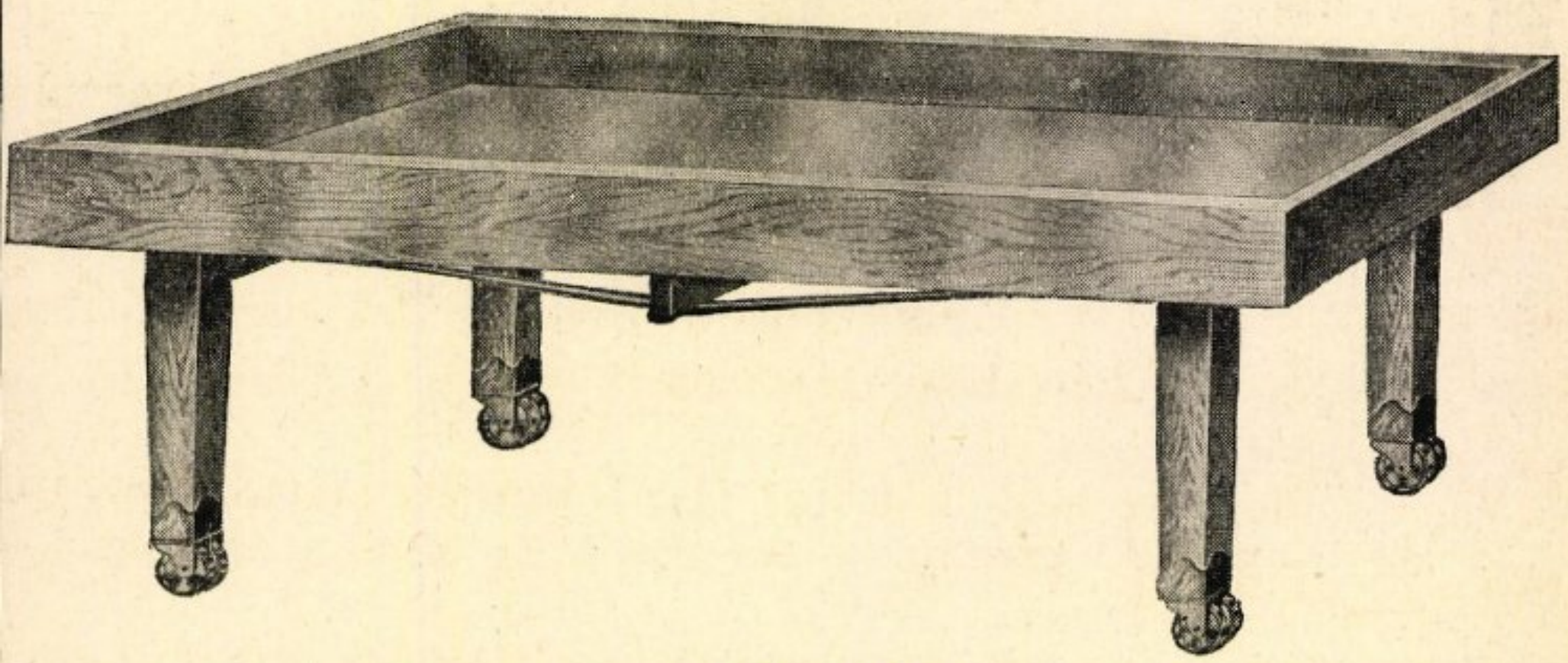


FIG. 29. Sand Table

3. A sink and a water tap set into the table make a desirable feature.

4. Attached and adjustable swinging stools add to the convenience of the table. If these are not present, unattached stools should be.

5. A porcelain top has the advantage of being cleaned easily.

6. Bread boards of about sixteen by twenty inches are necessary.

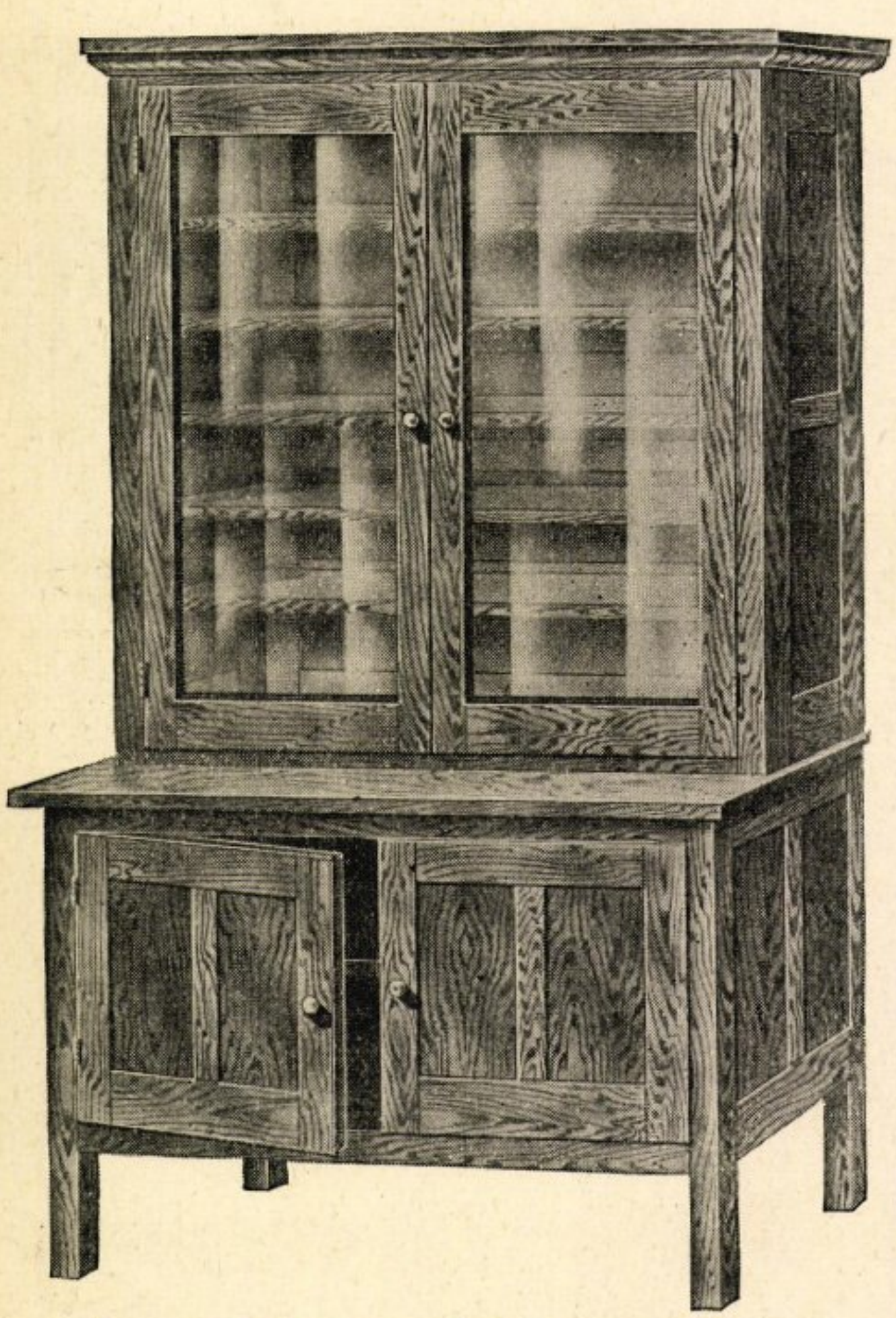


FIG. 30. Kindergarten Storage Cabinet

7. The student should observe the construction of the table with respect to durability.

8. Each pupil should have not less than three feet of lateral working-space.

9. The height of the laboratory table should be such that the pupils working at it may stand erect and with arms unbended place the hands (palms down) upon the table top.

10. Since sliding doors stick, it is preferable that the doors swing upon hinges.

Fig. 27 represents a sewing-table suitable for a domestic-arts laboratory.

The student should observe carefully the following distinctive features in the domestic-arts sewing-tables over which she is to have charge as a student teacher:

1. Drop leaves add greatly to the space for sewing and can be lowered when not in use.

2. The table should be provided with drawers and locks.

3. The pupil should observe the construction of the table with respect to durability.

Kindergarten. Fig. 28 represents a suitable kindergarten table. It may be folded and removed when not in use.

The student should observe the following items in a kindergarten table:

1. The top should be divided accurately into one-inch squares.
2. The height should be about twenty inches.
3. A folding table is preferable.
4. The table should be solidly constructed.

Fig. 29 represents a suitable sand table.

1. The tray should be metal lined and about four inches deep.
2. The table should be mounted upon ball-bearing, rubber-tired casters.
3. The height of the table should be about twenty-four inches.
4. The student should observe the table from the standpoint of solidity of construction.

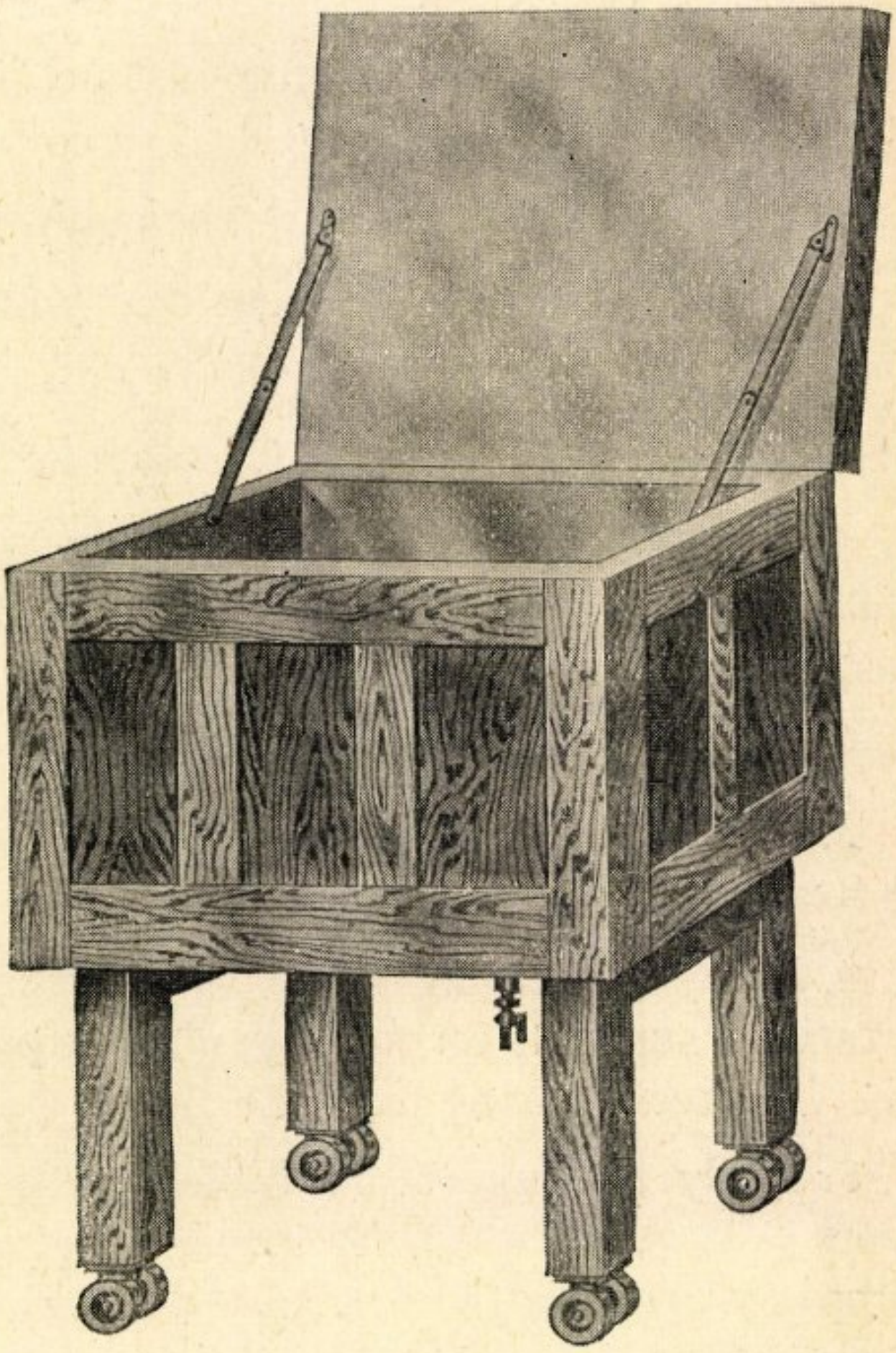


FIG. 31. Clay-Storage Box

Fig. 30 represents a suitable storage cabinet. A supply case or cabinet is a necessity in a kindergarten room for the storage of such materials as alphabet, building, and picture blocks, beads, paper, cardboard, yarn, colored crayons, picture books, pencils, needles, and raffia.

Fig. 31 represents a clay-storage box so constructed that clay may be kept moist. Such a box is very desirable, though not absolutely necessary.

GUIDE TO OBSERVATION AND REPORT

Nonlaboratory

1. Read the above discussion carefully before attempting to observe on this lesson.

2. List the equipment for instruction which you find in the classroom.

3. Discuss the adequacy of the equipment to the task at hand.

4. List additional equipment that you would suggest.

Laboratory

1. Study the manual to determine the equipment needed. It will be necessary to discuss with the instructor the experiments actually performed.

2. List the equipment needed.

3. Check the list against the equipment in the laboratory and storeroom.

4. Study the seating of the pupils with respect to viewing demonstrations, supports for writing, and the possibility of the instructor's moving freely among them.

5. Study the laboratory tables, noting their suitability for the work. Are they properly constructed and equipped? Are they properly arranged with respect to light? Are the pupils crowded too much?

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Eells, Harry L., Moeller, Hugh C., and Swain, Carl C. Rural School Management, chap. vii, pp. 139–153, "Rural School Equipment." Charles Scribner's Sons, 1924. A very complete discussion of the equipment necessary for instruction, sanitation, and health in the rural schools

KINNE, HELEN. Equipment for Teaching Domestic Science. Whitcomb & Barrows, Boston, Massachusetts, 1911. This book contains many valuable illustrations of the design and arrangement of domestic-science equipment, as well as lists and prices of the equipment needed for various sizes of classes. (This material may also be found in *Teachers College Record*, May, 1909.)

O'LEARY, IRIS P. The Kitchen and its Equipment, *United States Bureau of Education Bulletin No. 1*, 1915. Government Printing Office. Price five cents.

STRAYER, GEORGE D., and ENGELHARDT, N. L. Score Card for City School Buildings, *Teachers College Bulletin No. 10*, Eleventh Series.

STRAYER, GEORGE D., and ENGELHARDT, N. L. Score Card for Village and Rural School Buildings of Four Teachers or Less, *Teachers College Bulletin No. 9*, Eleventh Series.

The following are reports of observations accompanying Lesson XIV:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Chemistry 12A

EQUIPMENT FOR A CHEMISTRY LABORATORY

This equipment should enable an average class, let us say fifty, ivided into two sections, to work with the most efficiency and with a inimum amount of apparatus. The average work performed by a lass of this size consists of about fifty-five experiments.

CHEMICALS REQUIRED

The terms in parentheses after the names of the chemicals refer to the rade of materials desirable; c.p. signifies "chemically pure."

This list does not include substances always easily obtained, such as ugar, lard, lime, clay, coal, cotton, iron wire, calico strips, lead, soap, erosene, gasoline, candles, cardboard, starch, cloth, milk, vinegar, utter, etc.

cid, acetic (36 per cent) (c.p.)	2.5 kg.
cid, formic (50 per cent)	2.5 kg.
cid, hydrochloric (density 1.2) (c.p.)	12.5 kg.
cid, nitric (density 1.4) (c.p.)	15 kg.

Acid, oxalic (c.p.)	11	kg
Acid, pyrogallic	0.5	kg
Acid, sulphuric (density 1.84) (c.p.)	20	kg
Acid, tannic (commercial)	0.5	kg
Alcohol, ethyl (95 per cent)	5	kg
Alcohol, methyl	1.25	kg
Alum (ammonium) (pure)	2.5	kg
Aluminum (turnings or filings)	0.25	kg
Aluminum sulphate (pure, crystals)	2.5	kg
Ammonium carbonate (pure)	0.5	kg
Ammonium chloride (pure)	1	kg
Ammonium hydroxide (density 0.90) (c.p.)	7.5	kg
Ammonium molybdate solution	2.5	kg
Ammonium nitrate (pure)	0.5	kg
Ammonium sulphate (commercial)	2.5	kg
Ammonium sulphide solution	2.5	kg
Antimony	0.15	kg
Arsenic	0.15	kg
Arsenic trioxide (arsenious oxide) (commercial)	0.15	kg
Barium chloride (c.p.)	0.5	kg
Benzene	1	kg
Bismuth	0.15	kg
Bleaching-powder	2.5	kg
Bone black	1.25	kg
Borax (commercial)	2.5	kg
Boric acid (pure)	0.5	kg
Cadmium	0.12	kg
Cadmium chloride (c.p.)	0.12	kg
Calcium carbide	2.5	kg
Calcium carbonate (precipitated)	2.5	kg
Calcium chloride (fused or granular)	5	kg
Calcium fluoride (fluorspar)	1	kg
Calcium hydroxide (hydrated lime)	2.5	kg
Calcium sulphate (plaster of Paris)	10	kg
Carbon disulphide (commercial)	1.25	kg
Carbon tetrachloride (commercial)	2.5	kg
Chloroform	1.25	kg
Cobalt nitrate (pure)	0.12	kg
Copper (turnings or scrap)	1.25	kg
Copper foil (thin)	0.5	kg

Copper nitrate (pure)	0.12 kg.
Copper oxide (black, ordinary)	0.5 kg.
Copper sulphate crystals (c.p.)	1 kg.
Cottonseed oil	1 kg.
Dyes: Bismarck brown, fuchsine, methyl violet, malachite green, Congo red	50 g. of each
alizarin paste (20 per cent)	0.5 kg.
Ether, sulphuric	2.5 kg.
Formalin	0.5 kg.
Gelatin	0.25 kg.
Glucose (sirup) or corn sirup	5 kg.
Gypsum (crystals)	1 kg.
Hydrogen peroxide	1 kg.
Iodine	0.12 kg.
Iron chloride (ferric) (c.p.)	0.5 kg.
Iron powder (iron reduced by alcohol)	0.75 kg.
Iron sulphate (ferrous)	1 kg.
Iron sulphide	5 kg.
Iron wire (picture-frame wire), No. 0	125 yd.
Junket	50 tablets
Lead, red	0.12 kg.
Lead acetate (sugar of lead) (powdered)	1 kg.
Lead monoxide (commercial)	0.75 kg.
Lead nitrate (pure)	0.25 kg.
Litmus cubes	0.25 kg.
Litmus paper (100 strips red, 100 strips blue)	5 tubes of each
Magnesium carbonate (powdered)	0.5 kg.
Magnesium sulphate (Epsom salts)	2.5 kg.
Magnesium wire or ribbon	0.12 kg.
Manganese chloride	0.25 kg.
Manganese dioxide (commercial)	5 kg.
Marble (walnut size)	15 kg.
Mercuric chloride (corrosive sublimate)	0.12 kg.
Mercuric nitrate (c.p.)	0.12 kg.
Mercuric oxide	0.12 kg.
Mercurous nitrate (c.p.)	0.5 kg.
Mercury	0.25 kg.
Nickel nitrate	0.12 kg.
Paraffin	2.5 kg.
Phenolphthalein	0.12 kg.

Phosphorus	0.25 kg
Potassium bitartrate (cream of tartar)	0.5 kg
Potassium bromide (granular, pure)	0.25 kg
Potassium carbonate (c.p.)	0.25 kg
Potassium chlorate (small crystals)	2.5 kg
Potassium chloride (c.p.)	0.5 kg
Potassium chromate (pure, crystals)	0.5 kg
Potassium chromium sulphate (chrome alum)	0.5 kg
Potassium dichromate (pure)	0.5 kg
Potassium ferricyanide (c.p.)	0.5 kg
Potassium ferrocyanide (c.p.)	0.5 kg
Potassium hydroxide (sticks, electrolytic)	1 kg
Potassium iodide (pure)	0.25 kg
Potassium nitrate (pure)	1 kg
Potassium permanganate (pure)	0.25 kg
Potassium sulphate (pure, anhydrous)	1 kg
Potassium sulphocyanide (c.p.)	0.12 kg
Silver nitrate	0.12 kg
Soda lime (granular)	2.5 kg
Soda	0.5 kg
Sodium acetate (fused)	1 kg
Sodium benzoate (pure)	0.12 kg
Sodium bicarbonate (baking-soda)	2.5 kg
Sodium carbonate (pure, anhydrous)	1.25 kg
Sodium hydrogen phosphate (disodium phosphate) (c.p.)	0.5 kg
Sodium hydroxide (sticks, electrolytic)	5 kg
Sodium nitrate (pure)	1 kg
Sodium peroxide	1 kg
Sodium potassium tartrate (Rochelle salts) (powdered)	2.5 kg
Sodium silicate solution (water glass)	5 kg
Sodium sulphate (crystals)	1 kg
Sulphur	2.5 kg
Tartar emetic (potassium antimonyl tartrate)	0.37 kg
Tin (granulated)	0.37 kg
Zinc (granulated, arsenic-free)	5 kg
Zinc (sheet)	1 kg
Zinc acetate (c.p.)	0.12 kg
Zinc chloride	0.5 kg
Zinc sulphate (crystals)	0.5 kg

Apparatus required for Each Student (to be kept in Student's Locker)

eakers, nest of seven, from 100-cc. to 700-cc.
ottles, wide-mouthed, five, 250-cc.
alcium chloride drying-tube, straight, 15 cm. in length.
vaporating-dishes: one, 7-cm.
ilters, 25, diameter 11 cm.
lasks, two, 250-cc.; one, 500-cc.
unnel, diameter 6.5 cm.
lass rod, one piece, 15 cm.
lass tubing, 30 cm. of 3 cm. inside diameter; hard, 10 cm.
ipestem triangle.
orcelain crucibles and lids, diameter 3.5 cm.
ubber tubing, 50 cm. of 6 mm. diameter.
plints, wooden.
ponge.
toppers: rubber, one-hole, to fit hard-glass tube; two-hole, to fit wide-mouthed 250-cc. bottle; two-hole, to fit 60-cc. bottle.
est tubes: graduated, 30-cc., 20 cm. long; twelve, 12 cm.; hard-glass, 15 cm. long and 1.7 cm. diameter.
est-tube brush.
est-tube rack.
owel.
Vatch glass, diameter 8 cm.
Vindow glass, four pieces 10 cm. square.
Vire gauze, two pieces 12 cm. square.

Apparatus to be kept in Stock by Teacher and supplied One to Each Pupil when needed

lowpipe, mouth.
urner, wing-top.
eflagrating-spoon.
ile, round.
ile, triangular.
Iortar (8-cm.) and pestle (both of porcelain).
latinum wire, small (No. 28).
crew clamp.

Apparatus to be left on Each Desk

Bunsen burner, with 75 cm. of rubber tubing to fit.
Clamp, iron, large, for holding flasks and condensers.
Pneumatic trough. The trough should be about 15 cm. deep, and larg
enough to hold four or five wide-mouthed bottles (250-cc.).
Ring stand and three rings.

Reagents on Each Desk

250-cc. bottles filled with the reagents named below. The bottles co
taining the sodium hydroxide should have rubber stoppers, th
others should be glass-stoppered.
Ammonium hydroxide (density 0.90).
Hydrochloric acid (density 1.2).
Nitric acid (density 1.4).
Sodium hydroxide solution (10 g. in 100 cc. of water).
Sulphuric acid (density 1.84).

General Apparatus

3 balances, sensitive to 1 cg. and made to carry a load of 100 g.
1 barometer.
12 burettes, 50-cc., graduated to 0.1 cc.
12 calcium chloride tubes.
12 pieces cobalt glass 10 cm. square (flame tests).
12 condensers (Liebig), with rubber tubing and large clamp.
3 sets of cork-borers (six in set).
10 gross corks, best grade (Nos. 7, 8, 9, 10, and 12).
3 cylinders, glass, about 30 cm. in length and 4 to 5 cm. in width.
3 cylindrical graduates, 500-cc.
3 cylindrical graduates, 200-cc.
1 distilling apparatus for preparing distilled water.
12 pieces hard-glass tubing, 20 cm. long and 15 mm. internal diamete
3 hydrometers, reading from 0.900 to 1.000.
3 magnifying glasses, small.
2 microscopes, eyepiece 1 inch, objective $\frac{2}{3}$ and $\frac{1}{6}$.
12 thermometers, graduated from -10 to $+150$ degrees C.
3 sets weights, 1 cg. to 50 g., in covered wooden box.

In going over the apparatus and equipment at XXX High Scho
I found that none of the items in this list were missing, also tha

any things were there which are not listed here. A few of them
e to be used in special work at the discretion of the instructor;
so many are used in demonstration. On the whole this high
hool has about the best-equipped laboratory (chemical) of any
its size that I have ever seen.

In examining the laboratory tables used by the students I
scovered the following things:

1. They are so made as to accommodate four students. A good fea-
re about them is that the student works facing the front of the room,
nd no one works across from him. This is an advantage as nothing that
being done by one student can in any way hinder another facing him.

2. On top of the tables are metal uprights holding two glass reagent
elves. Each student is supplied with one, with the necessary reagent
ottles.

3. There are one gas cock and one water tap for each individual, and
e sinks are so arranged that two students can use the same one. The
nk is placed between the two and contains a shelf for the preparation
certain gases. This in itself is a very fine feature.

4. The top of the table is made of soapstone. There arises in one's
ind a question about the suitability of such material when breakage of
ass articles is so common in the chemistry laboratory. On inquiry,
owever, I found that only one student out of a class of twenty-five had
oken anything on the table, and this was caused by a flaw in the prepa-
tion of the article. A soapstone surface is suitable for several reasons:

a. It withstands chemical action and ordinary mechanical pressure.

b. If a gas jet is accidentally knocked over, as is done fairly often, the
e does not in any way affect the surface.

c. Any sticky substance that tends to adhere to the surface, such as
raffin, can easily be scraped off with a piece of metal or glass.

5. Immediately under the top is a sliding writing-leaf. It eliminates
e necessity of writing up the experiment on the table top, and prevents
due soiling.

6. The body proper of the table is made of birch, and it contains six
all drawers, each equipped with a lock, and a large cupboard. This
pboard is big enough to hold such equipment as ring stands, pneumatic
oughs, etc. for two students. The whole table contains two cupboards
d twenty-four drawers, six being on each side of a cupboard.

7. There is no toe space at the bottom of the table. This, however,
a trivial matter, to my mind.

8. A jar for waste material stands at each end of the table. Two these receptacles are sufficient to accommodate four students.

9. The one disadvantage that I saw was the distance between t tables. When a student is at work he takes up practically the enti aisle space, consequently hindering the movement of another pers passing through the aisle.

10. Windows are arranged at both the south and west ends of t room, and sufficient light is furnished to enable the student to work wi ease of vision. This arrangement also might be considered a disa vantage, because the best lighting effect can be obtained by windows one side of the room only.

11. Stools were in the aisles but were apparently useless, for no o used them while at work. One reason for this is that the length of t work period is so short that the experiments must be done rapidly, a none of the students write up their work in the laboratory owing to t time element. Consequently access to the writing-leaf under the tab is unnecessary in this case.

12. A hood for work with poisonous gases extends along the enti side of the room opposite the windows.

The instructor's desk is not in the laboratory but in the recit tion room. The reason for this is to enable all the students witness the demonstrations, which is possible in the recitation roo because of the elevated seats. In the laboratory the class mu either crowd up in the front of the room or stay at their respecti tables, where they cannot see the demonstration clearly becau of the uprights in front of them. Consequently the reason for ha ing the instructor's desk in the classroom is a logical one.

In examining the desk I discovered the following facts:

1. It very much resembles the tables used by the students, except th the uprights and reagent shelves were missing, and the drawers and cu board are larger. They contain different apparatus, such as electric mechanical, and glass articles.

2. There is no hood on the desk, nor are asbestos pads to be se The latter would not be necessary on a soapstone surface.

Behind the instructor's desk is located a large cabinet, in whi is stored such materials as are likely to be used during classro demonstrations. This is a very desirable feature, as it economi the instructor's time and energy.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Kindergarten

The room that I visited is not well equipped for a kindergarten. lthough but few articles are needed, the equipment as a whole not well suited to the requirements. There is a good blackboard the room, but it is too high to be used by the pupils themselves. he reason for this is that the room was formerly occupied by pupils the upper grades. There is no circle on the floor, as is common kindergartens. This matter could be easily remedied.

With respect to the children's tables, there is but one table in the oom in which I am observing. Since the table is but four feet by ght feet, it does not provide the necessary room for all to work at e same time. Nor is it constructed to meet the needs of the chil- ren. The top is not marked off into squares as it should be. It is combination of sand table and work table, the sand being kept nderneath the table top, which is removable. As a result the wer part of the basin is so low that it prevents the children from tting up to it. Since the chairs are all too high, the situation is ceptionally bad. The sand table is too shallow, being only three ches deep. It is not lined with metal. As the legs have no sters, it is almost impossible to move the table. The supply case old but answers every purpose. There is a good piano in the om. This is very desirable for use in connection with plays and mes. Green burlap forms a wall board upon which to pin the ildren's paper clippings.

All in all, the room is very unsatisfactorily equipped.

LESSON XV

Aim. *To appreciate the provisions which the school has mad*
for study.

The homes from which the pupils come are so varied wit
respect to opportunities and incentives for supervised stud
that it is very essential that schools provide in a large measu
for it. For illustration, let us assume two pupils of the sam
age and grade taking the same assignment home for prepara
tion. Pupil A goes to a home of considerable culture and mean
He has a comfortable study of his own, which contains man
reference books. Fond parents encourage him to go there an
prepare his lesson. He is offered a reward for high scholarshi
Moreover, older brothers or sisters or the parents themselve
are ready to help him over a difficulty in the lesson at any tim
In contrast to this, picture the home into which pupil B goes t
prepare his lesson for the morrow. The only comfortable roo
in the house is the kitchen or dining-room. He has no referenc
material. The father, who is lukewarm to anything for whic
he does not see an almost immediate dollars-and-cents outcom
is reading the newspaper. He wishes to read aloud and com
ment on interesting sections for the benefit of the rest. Tw
younger brothers are engaging in their daily evening quarr
over playthings, and the mother, who means well, drives all
distraction by her incessant scolding. Pupil B gets neither a
nor encouragement. A returns to school on the morrow with
well-prepared lesson and B with scarcely any preparatio
Hence the importance of having much of B's work done at t
school. At least B must go home so well prepared to attack t
lesson that he will need neither reference books nor aid.

While the grade schools are providing plenty of opportunity or study in the building, as far as the material and administrative equipment are concerned, many of the new high schools re being fashioned after the higher institutions of learning n this respect. Such schools generally have a library fairly vell equipped with reference material and supervised by one f the teachers during each hour of the school day. Such a ibrary often will not seat more than one hundred pupils out f the one thousand that are in the building. For this reason he pupils are encouraged to go home as soon as the morning or fternoon class periods are over. The pupils who go to the brary often arrange themselves in such groups that little erious study is possible. John means to work, but he has seated imself directly opposite Mary. The result is that while the ages are being turned the thoughts of both are less than 50 per ent on the lesson. Then, too, equipment such as books, paper, encils, rulers, etc. is kept in lockers. The pupil sits down to ork and finds that he has not all the needed materials. All n all, he is fortunate indeed if out of the hour he gets in more han twenty minutes of serious study.

The old-fashioned study room with individual desks for all eems preferable. At least they help many a pupil to get the lace habit of study. He does not have to get accustomed to ew surroundings every time he sits down to study. Those who nterfere with each other's study may be forced to sit apart. he study hall should not be closed immediately after school ours, but rather the pupils should be encouraged to remain and udy. The room should be well equipped for artificial lighting.

Instead of providing one large assembly hall for all pupils it better to have three or more smaller ones. In the first place, is difficult properly to light the large room. In the second lace, more thoroughgoing supervision of the study hall is posble with the more homogeneous groups. It may be objected hat such an arrangement would require more teacher-hours

to be spent in assembly rooms. Such an objection is not vali unless the school is very small or one considers the teacher presence in the room to be more in the nature of police dut than of helpful supervision.

GUIDE TO OBSERVATION AND REPORT

Nondepartmentalized Schools

1. Note any physical conditions, such as lighting, heating, ventila tion, defective seating, unsatisfactory desks, etc., which would tend t reduce the pupil's efficiency in preparing lessons while at the schoo

2. Note any provision that may be made for individual instruc tion, such as

a. A special room, to which pupils may be sent to make u back work.

b. Assistants to regular teacher, who go about the room givin help to those who are studying or working at the board.

c. The presence of dictionaries or reference material, to whic individuals may be sent.

3. Note any administrative provisions for obtaining greater homo geneity of the class group (see those mentioned in Lesson XII pp. 112–114).

Departmentalized Schools

1. Is it the general policy of the school to devote a part of th recitation hour to supervised study?

2. What provision, if any, other than that done during the clas hour, is made for studying in the building?

3. Is the ultra-class-hour studying done in a regular assembl room equipped with individual desks, or is it done in a librar around tables?

4. Note whether the school is equipped with one large study ha or whether there are separate study halls for each grade.

5. Note any defects in the heating, lighting, or ventilating of th study halls.

6. Are the seats and desks adjustable?

7. Observe the desks with respect to their suitableness for worl Have they inkwells, pencil grooves, and a place for books?

8. Does the study room seem to have an abundance of reference material?

9. Criticize the study room from the standpoint of æsthetics.

The following are sample reports of observations accompanying Lesson XV:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Provision for Study

At XXX High School forty minutes of the school hour are given to recitation, and the remaining twenty-four minutes are used as a supervised-study period. During this period the teacher sometimes walks around the room giving help to those who need it, and sometimes he remains at his desk and the pupils go to him for help on the advance lesson. There are large session rooms in the building, which are used for assembly and study rooms. Each student has an assigned seat in one session room, or "home room," to which he must report in the morning and at noon. It is in his session-room desk that the student keeps his books. Most of the students have a schedule of four recitations a day. Since the day is divided into five hours an extra hour is without assignment, and at this time the student reports to the session room and studies for an hour at his own desk. The students are permitted to go to the library at this time for reference work. A clerk marks on each pupil's slip the time when he leaves the library. He also helps the students find reference books. The library is at all times in the charge of a classroom instructor.

There are four large session rooms in XXX High School, and the students are divided pretty accurately according to their grades. All the session rooms are on the east side of the building: two on the first floor, and two on the second. The entire east wall in each room is window space. There is plenty of natural light on bright days, and the electric lights are well placed. The heating and ventilating of the room are very well arranged to produce the best

results. The seats are not adjustable, and all are of about th same size. This is very unfortunate, since all pupils are not o the same size. The desks have inkwells, pencil grooves, and place for books.

At the front of session rooms are bookcases with reference mate rial—not a great deal, however, since most of the reference book are in the school library.

There is at least one good picture on the front wall of eac session room. The walls of these rooms are very clean and ar tastefully decorated. The rooms are very well kept, as are all th rooms in the building.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Third and Fourth Grades

The XXX school does little with respect to supervised study The room in which I am observing contains about forty pupils an is taught entirely by one teacher. Hence she is so busy hearin lessons that there is little opportunity to direct the study of pupils The lessons are well assigned, but the pupils prepare them unaided

The room contains three small dictionaries and a few referenc books. The desks are adjustable and are for the most part wel fitted to the pupils occupying them. The lighting seems to be i all ways satisfactory for good work. The size of the school systen does not permit desirable grouping of the pupils for instructiona purposes.

The building contains a "make-up" room to which pupils wh for various reasons are failing are sent for special coaching. Thi room is full most of the time. Since the group is of course ver heterogeneous, the teacher can give but little time to each pupil

I have been impressed with the fact that a large majority of th pupils in the make-up room appear to be retarded in mental de velopment. The make-up room seems to me to be used largely fo the purpose of trying to help the dull pupils keep up with th bright ones.

4

LESSON XVI

Aim. *To understand the procedure of supervised study.*

Supervised study the result of change in fundamental point of view. Formerly we looked upon the school as having fulfilled its purpose when the pupils knew a given number of facts or could perform creditably the fundamental operations reading, writing, spelling, and arithmetic. It was comparatively satisfactory then to have much of the required drilling done outside the school, the pupils during the class period reciting upon the facts or producing evidence of skill attained in the performance of previously assigned tasks. Such learning is largely, if not entirely, on the memory level and as such lends itself readily to the recitation and unsupervised-study methods. Recently, however, we have focused our attention upon other outcomes. It is the interpretation of the facts and the use of the skills that interest us. The tasks that we set before our pupils are on a higher level; and hence they need more supervision in their performance, if much time and ultimate efficiency are not lost.

Supervised study should develop the pupil's initiative and ability to help himself. A serious defect in the method of assignment and recitation lay in the fact that bad methods of study persisted throughout the pupil's school days. He did not learn how to gather the essential points and properly coördinate and subordinate them. One sentence was as important as another; nothing stood out in his thinking. In fact reflective thinking was seldom done. To quote Professor H. L. Miller[1]:

[1] Eighteenth Yearbook of the National Society for the Study of Education, p. 45. Public School Publishing Company, Bloomington, Illinois. Reprinted by permission.

The immature pupil in isolated home study too frequently energize far below his optimum. He is likely to be confused as to the purpos and value of his efforts. While it is no doubt true that in outsid preparation of lessons many pupils develop individual initiative and certain independence in following up assignments on their own respon sibility, it must be obvious that large numbers fail to make satisfactor progress. It is recognized further that home preparation of lessons fo subsequent recitation in class has contributed to the development o mutually interpenetrating interests between the home and the schoo Connections of a valuable sort are established in spite of the feelin which often finds expression in the charge that parents and tutors (wit or without compensation) are required to do the teaching, while th instructional staff merely assigns and hears the lessons under the recita tion system. The procedure suggested in the interpretation of super vised study in this report undertakes to reverse in a large measure th preparation-recitation order. In the redirected class period the pupil i to know at once whether he is working along fruitful lines. What h does is checked and evaluated not only by individual oversight but als through the coöperative efforts of pupils working together. He is taugh to examine data for himself, to think his way through by the use o organizing principles, to arrive at conclusions for himself, and to submi his results to the scrutiny of the group in which he is working.

Teacher's main task in study hall to supervise study. Th teacher is successful in the study hall largely to the extent t which he is able effectively to supervise and improve the pupils studying. The problem of general discipline must not be over looked. Effective supervision cannot go on in a disorderl room. However, the fact remains that the teacher's work is no finished when order has been obtained. It is then that he mus go about among the pupils for the purpose of guiding those wh seem to need guidance.

Comprehensive knowledge of subject and its special method necessary. It goes without saying that the teacher cannot ef fectively supervise the pupil's study in a field in which he ha little knowledge of the content and in which no attention ha been given to special methods. Hence it follows that the mos

effective supervision can be carried on only by specialists in the fields to be supervised. Ideally, for example, only teachers of mathematics should supervise the study of mathematics. To carry this out effectively would require that the study programs of the mathematics pupils be so prepared as to require the study of mathematics at stated periods. During the periods one or two representatives of the department of mathematics should be present for supervisory purposes. Aside from those who are to supervise the studying there should be a teacher in general charge of the room whose duty it is to maintain order and check the attendance.

Classroom supervision more desirable but more expensive. A more desirable arrangement, but one which is still more expensive, is that of increasing the length of the class period and devoting at least half the period to the supervision of study. In this way pupils spend their entire day in classrooms. This plan has the following advantages over the study-hall type of supervision:

1. All pupils in the room are studying the same thing. Hence the teacher can explain an important point to all at once, if desirable.
2. There is the advantage of the place-study habit.
3. The teacher knows the recitation difficulties of each pupil.
4. Recitation difficulties are fresh in the minds of the pupils.
5. The groups to be supervised are smaller.
6. There is little outside attraction as compared with a study hall.
7. Classroom equipment, such as maps, board, graphs, etc., is close at hand.

Study-hall supervision has the following advantages over classroom supervision of study:

1. It may be so administered as to conserve floor space (utilizes space otherwise used for auditorium).
2. It may lessen the cost of supervision per pupil-hour by increasing the size of the group being supervised.
3. The pupil is more likely to have his personal equipment with him.

Classroom supervision has the following disadvantages:

1. The teacher may run the recitation over into the study period.
2. Teachers may spend the supervised-study period in correctin papers or some other work of that nature.

Study-hall supervision has the following disadvantages:

1. Many pupils in the same room studying many different subjec make supervision by general teachers less efficient.
2. Teachers do not know the recitation difficulties of the individu pupils.
3. Recitation difficulties are not fresh in the minds of the pupils.
4. The group to be supervised is large.
5. There is more going on in the large study hall, which is likely t attract the pupil's attention.
6. There is less opportunity for motivation and problem or proje work.
7. The atmosphere of the study hall is not always conducive to in dividual initiative.

All in all, it seems desirable that at least half of the pupil studying be done in the classroom under the direction of th regular teacher. The other half may be done in study halls o at home. In case crowded conditions and lack of money de mand that auditorium space be given over to a large assembl hall and that classroom study be abandoned, more of th teacher's time being used for hearing recitations, it is necessar that an effective type of supervised study, such as we have de scribed above, be carried on in a large study hall or, preferably in three or four smaller ones. In case small study halls are used it seems advisable to recommend that students be assigned t them as far as possible by subject rather than by grade. I would aid materially in effective supervision if most of th pupils studying mathematics could be counted on to be in given study hall at a stated time and if their study program could be made out so that their mathematics lessons would b prepared at that time. The principal could then assign a mem ber of the department of mathematics to this study hall at th

tated hour. Such a teacher would be likely to supervise studies
n mathematics much more effectively than an instructor in
English would.

Subjects vary in amount and kind of supervision required. Although it is impossible as yet to state accurately the amount of supervision necessary for effective preparation of lessons in each of the various subjects, it is a fair assumption that this amount varies with the subject under consideration. The more abstract subjects necessitate more close attention to the activity of the individual pupil than do subjects requiring considerable reading but having a content less difficult to understand. The subject of mathematics, for example, might well be expected to require daily supervision by the classroom teacher, each teacher attending only to the group which she has had during the previous recitation period. On the other hand, it may be a waste of time to attempt the supervision of history in the same manner. Perhaps all the pupils should be collected in the large assembly room that has been well equipped with historical reference material and placed under the direction of one or more teachers. The teacher's work in this case would correspond rather closely to that of library directing. He would direct the pupils to reference material, see that material is returned properly to the shelves, direct the pupils' interpretation of difficult passages, etc. This practice would correspond quite closely to the supervision carried on in laboratories. As was intimated above, there is much need for careful experimentation as to both the amount and the form of supervision desirable in each subject. We can at best make only tentative suggestions. It is our purpose here to make the prospective teacher fully aware of the fact that there are problems in this field which will demand his consideration rather than to attempt to formulate a solution.

Supervision through class recitations and lesson assignments. Many teachers do much to improve the study of their pupils by

so conducting the recitation as to demand effective study in th preparation of the lesson. The teacher who conducts the hi tory lesson in such a manner as to make the recall of fac sufficient for the perfect recitation does nothing thereby t develop the habit of thoughtful reading of historical matter. I fact he may do much to spoil good habits of study previousl established. Likewise the assignment that says "Take to pag so and so" does nothing to set the pupil to reading with problem or aim in mind. Hence he does not weigh and arrang the facts so as to eventuate somewhere. His study is thereb disintegrated and ineffective except as isolated facts may remai in consciousness long enough to be given back to the inefficie teacher. On the other hand, the teacher who conducts th lesson and makes the assignments in an effective manner do much to improve the quality of the study.

Process of supervising study must conform to canons of goo teaching. To begin with, as the classroom teacher must appr ciate the apperceptive background of the class as a whole, s must the supervisor appreciate the apperceptive backgroun of the pupil whom he is about to help. It is to no small exte for this reason that the supervision of the pupil's study by th regular classroom teacher immediately after the recitatio period should be most effective. He most truly appreciates th limitations of the individual at this time. A study-hall supe visor other than the pupil's regular teacher, though he is ver skillful in the art of supervision and knows the subject, has th great limitation to his effort; namely, he has not the backgroun for understanding the needs of each pupil that is possessed b the one who has conducted a classroom discussion of the pr vious lesson. A vital element in good instruction is lackin The element of familiarity with the pupils must also be co sidered. The study-hall supervisor will be more or less a strang and hence more difficult to approach. The teaching situatio demands a friendly acquaintance between teacher and pupil.

Having mentally surveyed the pupil's apperceptive background, the teacher must next lead him by questions so to marshal his experiences as to throw light upon the problem at hand. To do this skillfully is the perfection of art as well as the crowning point of effective supervision. It matters not how carefully the administrative plans for supervision have been laid; if the teacher fail at this point, the supervision of instruction falls to the ground. An insight that tells us to what extent to help and an art that has been developed to carry out the process will prevent supervised study from becoming, as one educator has characterized it, "organized interference."

GUIDE TO OBSERVATION AND REPORT

Study Hall

1. Note the number of seats in the study hall.
2. Note the number of pupils in the hall.
3. What percentage of the pupils seem to be at work?
4. Does the teacher in charge go about observing the pupils' work, or does he wait for them to come to him with their troubles?
5. If more than one teacher is in the room, note the ratio between the number of teachers and the number of pupils.
6. Do the teachers aid the pupils indiscriminately, or has each teacher been assigned the supervision of certain studies, such as history, mathematics, etc.?
7. Does the teacher's help seem to be that of merely telling, or does he ask the pupil such questions as will aid him to help himself?
8. Are all pupils not in classes expected to be at work in the study hall?
9. Does the supervisor check up to see that all are present?
10. Have you observed many pupils loafing around the corridors during the class periods?
11. Do pupils ask permission to leave the study hall?
12. Are the pupils encouraged to follow a program in preparing their lessons?

13. Have printed suggestions on how to study been distributed to the pupils at any time during the year?

14. Do pupils seem fully to utilize the reference books and dictionaries found in the study hall?

15. Could the physical conditions (heat, light, ventilation, etc. have been improved by the teacher at the time during which the observation was made?

16. Determine as nearly as possible the number of hours per day spent in the assembly hall by the average pupil.

Classroom

1. Note the length of the study period.

2. Is the recitation conducive to better study?

3. Is the assignment made with a view to improving the pupil's study?

4. Does the teacher go about helping the pupils during the study period, or does he wait for the pupils to ask for help?

5. Does the teacher engage in other work, such as correcting papers or planning his work, while the pupils are studying?

6. Does the teacher ever make suggestions to the entire class?

7. Could the physical conditions (heat, light, ventilation, etc. have been improved by the teacher at the time during which the observation was made?

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The following are sample reports of observations accompanying Lesson XVI:

OBSERVER: XXX

SCHOOL: XXX

ROOM: Assembly Room No. 108

At 2.30 P.M. the supervisor entered the room and immediately egan taking the roll of those present by checking absent pupils om a plot of the room. After the roll was taken about twenty pils gathered round him for the purpose of obtaining slips peritting them to go to the library. As each returned he presented signed slip from the librarian.

The study hall contains a hundred and twenty-five seats. Only e is adjustable. They are for the most part in good order. he supervisor informed me that 20 per cent of the seats had iginally been adjustable, but the janitors had removed all but e of these seats to other rooms.

About 75 per cent of the pupils were working. Eight pupils re sitting two in a seat. Only one of this number was working. he others were talking to each other and wasting time in general, sides disturbing those around them.

There was no attempt at supervising the work of the pupils. In is school half of each class hour is given over to supervised study, d hence the one in charge of the study hall is expected only to ep order and take the roll. The roll is kept on a uniform slip paper and given to a girl who collects the slips from the various udy halls, after which she takes them to the principal's office.

The room is well heated by steam radiators. The ventilati facilities are good, but the fans were not running when I was the thus making the room somewhat stuffy. There was plenty of ligh ing space (I estimated it at one fourth of the floor space). T light came from the left, with the exception of that which ca through two glass doors which opened upon the corridor at t right. In spite of the fact that the space for the admission natural light was adequate, there was need of supplementary ar ficial light on this day, which was dark. The artificial lighti was bad. There were sockets for twenty bulbs; but only ni were supplied, and they were not properly shaded.

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9B

STUDY HALL

Session room 214 was the one in which I observed a fourth-ho class at work. There are one hundred and twenty-three seats this room, but only about forty-four pupils were present during t fourth hour. Most of the pupils seemed to be very busy, but thr of them seemed to be idling away their time. The teacher w had charge of the room is a mathematics instructor, and her or duty is to take the roll and keep order. Of course, she can he those who want help in mathematics, but those who wish assistan in some other subject have to go elsewhere. The teacher remai at her desk in the back of the room, and those desiring help go her for it; she does not walk round the room offering aid to tho who need it. All pupils not in classes are expected to be in th respective study halls at work unless they have been excused take part in some school activity such as the orchestra, the week paper, or the football team. There are no students to be seen lo ing around in the halls during the class period. The only ones in t halls are those going to and from the library. Each pupil pla his name on a slip of paper and presents it to the teacher in cha of the session room when he wishes to go to the library. T

udents must at all times ask permission to leave the study hall. owever, the students use the dictionary in the study room and the ference books without asking permission. The reference books the study room are used occasionally, but those in the library e used often.

The study room was very stuffy the day I was there, and only vo windows were raised slightly. Both doors to the room were ben; but the air was not as fresh as it might have been, had ore of the windows been lowered from the top. The window ades were well arranged to obtain good light in the room. It was very bright day, and there was no need for artificial light. The ntilation is the only thing I would have changed.

Classroom

The study period that follows the recitation is a twenty-four-inute period. The recitation helps to clear up difficult steps in e type of problem the class is studying and paves the way for the oblems attacked during the study period. In this way the recita-on is conducive to better study. The assignment is made with thought of improving the pupils' study. A certain number of oblems is assigned, and each student is expected to do his or her st with them. The teacher sometimes walks round the room lping those who wish to be helped, and sometimes he remains his desk and the students go to him for help. Very seldom does e teacher engage in other work while the pupils are studying. nly one day have I noticed the teacher doing other work. That e time he was preparing some letters to be mailed, which no ubt referred to work on the year book, for he is helping with at work. Many times when helping one pupil over a difficult rt of a problem he makes a suggestion to the entire class con-rning that problem. He is very observant of the light and venti-ion of the room, and I believe that at no time could I have proved on the physical condition of the room.

PART II

INTRODUCTION

Part II deals with the instructional phase of classroom acti
ity. Up to this point the student has been studying and obser
ing the setting and tools more or less apart from the teachi
process itself. He is now to center his attention upon metho
of instruction. In general one may say he is shifting his atte
tion from the form to the process. The earlier lessons, if fait
fully carried out, have acquainted him fully with the setting
which the immediate processes of instruction are to take pla
He knows each pupil, including something about his strong a
weak points. He has likewise become acquainted with t
classroom teacher. Hence he is in a better position to evalua
instructional technique.

Lessons XVII and XVIII are not accompanied by observ
tion. The student, however, must study them with great ca
since they form a basis for the observations that follow. F
example, one cannot use intelligently the terms "method
"devices," and "technique" without first strictly defining t
terms. This is done in Lesson XVII. One must understa
what is meant by goals and fully appreciate the fact that th
must be clearly before the mind of the one who is to dire
effectively any activity that is above the level of mere hab
This is done in Lesson XVIII, which includes also examples
remote and immediate aims.

Careful attention should be given to those aims dealing wi
the subject in which the student is observing. It is particular
important in dealing with general or remote aims that t

udent master the thought and express the aims in words other
an those of the text. It is conceivable that a student might
e aims which have been copied verbatim and get no benefit
natever from the process. The statement of an aim is of value
ly to the teacher who has thought it out. This demands that
ginning teachers acquire a philosophy of education as rapidly
possible. Method in any complete sense has its basis in
th educational philosophy and psychology. Educational phi-
sophy guides us in determining what we should accomplish.
ychology guides us in determining the method of attack.
In dealing with Lesson XXII the student should center at-
ntion upon those special devices which apply to the subject
der observation.

LESSON XVII

Aim. *To develop the ability to distinguish between metho*
device, and technique and to classify each.

Distinction between method, device, and technique. Profess
H. W. Nutt[1] defines "method" as "the characteristic ment
procedure of the mind of the learner in attending to any obje
that is brought before it for consideration." He says:

> This characteristic mental procedure is as follows: The mind first se
> the object as a vague whole; it then analyzes the object, noting i
> prominent characteristics; it discovers some dominant characterist
> and reorganizes the object around this dominant characteristic; th
> same form of analysis and reorganization takes place whenever th
> object, or one similar to it, is present before the mind, until it becom
> the habitual form of reaction of the mind to such an object.

It is already clear to the reader that this is not the comm
use of the word "method." However, it is a valuable use of t
term and is the only one possible if one is to make a logical
perfect distinction between methods, device, and techniqu
This will be seen readily when we come to define "device."

If method is the characteristic procedure of the mind of t
learner, then the principles of method applied to teaching b
come the psychological laws governing the mode of presentati
of new material. How rapidly should new material be intr
duced? Should one proceed inductively or deductively? Is t
material suited to the age and experience of the pupils? The
are questions of method. The device is a tool by means
which the method functions. The question is a device that m

[1] The Supervision of Instruction, p. 76. Riverside Textbooks in Educati
Series. Reprinted by permission of Houghton Mifflin Company.

e used in accord, or out of accord, with the principles of nethod. The device has value only in so far as it aids in bring- ng the material before the mind of the learner in accordance vith the psychological laws governing the mental processes.

A teaching device is any means intended to facilitate the rocess of presenting material to the mind of the learner. Hence we have two kinds of devices, mental and physical. Classrooms, blackboards, chalk, books, pencils, etc. are ex- mples of physical devices, and lesson plans, questions, drills, xaminations, reviews, etc. are examples of mental devices. It s not always easy to distinguish sharply between the two classes f devices. This is owing to the fact that a physical device is mental device embodied in material. Flash cards, for ex- mple, embody an idea relative to a means of drill. Hence lash cards are in a sense mental devices. We think of them as hysical because we turn our attention to that side of their ature. The question, on the other hand, is entirely mental n its nature.

In distinguishing between device and technique we may hink of the device as the structure, or form, of the process, whereas the procedure of causing the form, or structure, to unction is the technique. Thus the forward pass is a football levice, but skill in handling the ball while the forward pass is eing carried out is the technique. Likewise developmental ex- osition is a plan of procedure adapted to increasing comprehen- ion. However, one has no more assurance of success because f its use than the quarter back has of advancing his team ecause he has called for a forward pass. Success will depend pon skilled technique. To quote Professor H. W. Nutt again, "The asking of questions to develop a point is a device, but the umber of questions asked, the speed with which they are asked, he form of the questions, the attitude of the teacher manifested n asking the questions, etc., are points of technique."[1]

[1] Ibid. p. 78. Reprinted with permission.

DEVICES

Material Devices

Material devices classified as general and special. Devic may be classified on the material side as general and specia The general devices are those which are found in every clas room, regardless of what class is being taught there. Th textbook, for example, may be considered a general America device. The special devices, on the other hand, are those a u for which would be found in few, if any, other classes.

Special devices most likely to be overlooked. It is because the fact that the special device is narrow in its application th its presence or need is more likely to be overlooked by th observer. One is more apt to note the lack of blackboard faci ties than the lack of a sufficient number of protractors. For th reason it is desirable that the student teacher list the neede special devices in preparing a lesson plan, or make a speci point of looking for them when observing.

Intellectual Devices

Intellectual devices may be classified under those applicab to lessons, examinations, and discipline. We shall discuss the in the foregoing order.

LESSON TYPES

Development method. The development method is a metho of classroom instruction in which the new idea is obtain during the instruction hour through a process of questioning lecturing on the part of the teacher. There are two types development lesson: expository development and convers tional development. These will generally be used together, a though it is conceivable that one might be used to the exclusi of the other throughout the entire lesson period. It is tru

owever, that the amount of expository development will in-
ease with the age and experience of the pupils. It is doubtful
hether it should be used in classes below those of college rank
r more than introductions to lessons and summaries of lessons.
he teacher is tempted to overuse it because of the skill re-
uired in successfully handling the conversational method.

The question of approaching the lesson inductively or de-
uctively will arise at this point. Our choice of either of those
ethods of approach will depend upon the pupils' present
nowledge. If they are already familiar with the general prin-
ple, the deductive attack will generally be most satisfactory.
n the other hand, if the pupils are familiar with many specific
stances, this fact should be used in developing the generaliza-
on by means of the inductive method. In general the deduc-
ve approach is the more rapid.

The development method is coming more and more into com-
on use. The class is no longer given over largely to the recita-
on of previously learned facts, valuable as this sometimes is.
is educationally very desirable that pupils learn to take part
the discovery of new truth, and the success of the teacher will
epend much upon his ability to get them to do so. Not only
ill the pupils retain longer the facts which they have helped
discover, but in the process we may expect them to develop
he habits of analysis and generalization.

Recitation method. The recitation method was at one time
sed almost exclusively. The pupils were assigned lessons
hich were to be committed to memory. Generally the lessons
onsisted of a series of factual statements that the pupils
arned by rote. The weakness of the process in terms of edu-
ational outcome lay in the fact that real thinking was not
ncouraged. The pupils did not learn to determine the bases
pon which the assumptions rested. This method when used
xclusively is almost barren of any desirable educational out-
ome. However, there are times when the teacher must sound

out the present knowledge of the class before going on with th lesson. At such times the recitation method is needed.

Project method. The project method increases pupil partic pation in the work. Under this method not only do the pupi participate in discovering new facts, but they aid in initiatin the process. The pupils in carrying out a project learn to ana lyze problems, to locate materials, to give prolonged attention t one thing, and finally to coöperate in tasks of some magnitud The project may be limited to one lesson or it may extend ove weeks or even months. It develops initiative on the part o the pupils and gives them self-confidence and independence i study. The value of this result is too often overlooked. It wa an eventful day for most of us when we discovered that we wer not entirely dependent upon the teacher. Hence the projec method of attack fulfills a vital aim in education.

Experimental method. The experimental method of attack used oftenest under laboratory conditions in connection with th physical and biological sciences. However, it is frequently valuable method of attacking a problem in the classroom. Th main difference between the laboratory method as used in th laboratory and as used in the classroom is that in the forme instance each pupil or group of pupils actually handles th materials in carrying out the experiment, whereas in the class room situation the teacher demonstrates and the pupils observ The teacher-demonstration type of experimentation has the ad vantages of cheapness and timesaving. In the case of chemica experimentation, safety comes in as an added argument fo teacher demonstration. Whenever this type is used, howeve care must be taken to prevent the class exercise from becomin an hour of mere entertainment. This can be done by followin up the lesson with a quiz or with such work as will cause th application of the facts developed.

Drill method. By drill we mean the driving of energy ove certain neural patterns until a given stimulus will unfailingl

ring forth the desired response. Assuming, then, that desirable eural connections have been made, the teacher's next con- deration is to make sure that these paths are so thoroughly uilt up that they will function in the future as well as in the resent. Of course, not all learning will demand drill; but here is a certain minimum of form that is needed for orderly nd effective thinking, and this minimum should be drilled horoughly into the nervous system. For example, Spencer's efinition of evolution is very useful to all who would think early with respect to the concept. Certain dates put back- one and form into history. We learn many kinds of tables ecause they are timesaving.

The danger lies in the likelihood of drilling upon reactions hich have at best only a temporary use or no use at all. Few, any, now would ascribe any value to a reaction unless at ome future time in life that specific reaction will be needed. Ve no longer speak of general mental discipline as an outcome f drill.

EXAMINATION TYPES

We may list under types of examination the final examination, he unexpected ten-minute written exercise, the "true-false" st, the multiple-choice test, and the incomplete-sentence test. Ve shall now proceed to examine into the merits of each. he final examination is, for the most part, only a grading de- ce. It is too late to use the facts gained thereby for purposes her than that of grading the pupils. It is generally, though it eed not be, a mere factual test which can be prepared for by e pupils, thus failing to test mental growth. Hence its value greatly overestimated.

The purpose supposedly served by the final examination is uch better served by a short written exercise at unexpected mes. The test can be made to cover assigned reading material, previous lecture, or a class exercise of the previous day and

can be given with a view to assuring the teacher that the wo is being done. It is not too late to repeat the necessary wo or to change faulty technique. The laggard can be locat quickly in this manner and given remedial treatment.

The remaining three types of test are much alike in purpo and method of giving. The "true-false" test consists in a seri of statements, based upon lectures and readings, which are to labeled "true" or "false" by the student.

1. Columbus discovered America in 1593. True False
2. Columbus received aid from the king and queen of Spa True False

The multiple-choice test consists of a series of statemen with the choice of several words or phrases at indicated poin of each statement. The pupil selects the proper word or phra by underlining it.

1. An example of a good conductor is glass, wood, copper, rope.
2. A Leyden jar is a form of transformer, generator, dry cell, condens

The incomplete-sentence test consists of a series of stat ments with parts omitted which are to be filled in by the pupi

1. The sepals of a flower collectively constitute the ——.
2. The ——, ——, and —— of a flower together constitute the pist

The last three tests mentioned above have the advantage being given and corrected quickly. Hence they enable the bu teacher to test the class more frequently. They also contain minimum of the subjective element; and this is desirable in test of information. They do not, however, give the student t practice of expressing himself effectively. They test only th part of the pupil's experience which can be answered witho question in the form of Yes or No. They should not, therefo be relied upon exclusively.

For disciplinary devices, see Lesson IX.

TECHNIQUE

We are now to focus our attention upon the technique of using devices. The device, though ever so well adapted to the purpose, if wrongly applied will fail. The golf club, though ever so perfectly made, will not be effective in the hands of the novice. There are ways of grasping it and of swinging it which are more likely to bring success to the average individual than the ways he would select were he not guided in the process by one who has observed those who have succeeded. At this point, however, it is well to keep in mind that the technique which will succeed with one will often fail with another, regardless of the effort put forth. And, conversely, one may succeed highly with a technique generally condemned by experts. The writer recalls at this point the remarks of a European expert who criticized the running form of the world's fastest runner, saying that he violated many of the supposed requirements for fleetness. The technique which succeeded when used by Paddock would probably slow down many a less capable runner. Nevertheless there *is* a body of technique worked out in all lines of expertness which has chance in its favor and which merits a genuine effort to imitate it.

Technique difficult to prepare for. There is a sense in which it is impossible to prepare in advance for the technique of teaching a lesson. One can determine the desired outcomes and the devices needed for the realization of those outcomes. But practice in the use of these devices can occur only while one is imagining the teaching of the lesson or when one is actually carrying it on. Of course, one is indirectly preparing for technique when one determines the outcomes to be striven for and the devices to be used, for one thereby outlines the form of the process of which the technique is the content. When the baseball player determines upon a sacrifice hit and picks up an appropriate bat for the purpose, he has taken the first two steps;

his next step is the proper bodily activity in using the device He may prepare for this by imagining the approaching ball an going through the actions of bunting it, much as the shadow boxer imagines his opponent and strikes and guards. This muc the teacher can do by way of imagining his class and thinkin through the process of instruction. However, as in the case o the shadow boxer, his opponent is not there in reality and he ca never become an accomplished artist except by practice in deal ing with a real situation. This does not mean that no goo comes from the mimic practice. It is very valuable, as is show by the great frequency of its use in other fields. The boxe prepares for his opponent in part by this method; the speake prepares in this way to deliver his oration. Hence the beginnin teacher may well think through the process of presentation and for a while at least, actually carry out the work in his stud before an imaginary class.

As technique becomes perfect it can be dropped more an more from consciousness. The objections to emphasizing tech nique in the early stages of training may be that thereby on brings about a consciousness of the process; and hence awk wardness follows. This objection comes from a failure to se the problem in its entirety. Any technique, effective or ineffec tive, must be conscious in its early stages. The teacher wh goes into the classroom to teach for the first time without hav ing first developed some technique through practice teachin must, like the student teacher, go through all the stages fro highly self-conscious technique to the stage of mastery in whic the tools are in the background of consciousness. The differenc is that his technique when once established is likely to be les effective.

Artist not at best while technique is in foreground of con sciousness. It is not until one is free to devote his entire atten tion to the outcome that the best work is possible. The novic who must divide his attention between his brushes and paint

nd the ideal which he is striving to represent will fall far hort of the master. A Beethoven forgets his piano and his ouch, and is lost in his masterpiece. A writer is aware that e holds a pen only when it gives him trouble. Hence the xperienced teacher may well be expected to forget his tech- ique. But he will succeed only if that technique is perfect. t is therefore important that the technique which is being stablished be desirable. The unsupervised beginner is very kely to lose forever his chance of doing his best.

GUIDE TO OBSERVATION AND REPORT

No observation will accompany Lesson XVII. The student hould hold a conference with the supervisor, who should make lear any difficulties.

SELECTED READINGS

UTT, H. W. The Supervision of Instruction, chap. vi, pp. 75–82. Houghton Mifflin Company, 1920. Defines and discusses methods, devices, and technique.

UTT, H. W. Principles of Teaching High School Pupils, chap. iii, pp. 79–108 (deals with method of learning); chap. vii, pp. 190–204 (deals with devices); chap. ix, pp. 231–294 (deals with the technique of teaching). The Century Co.

LESSON XVIII

Aims. *1. To develop the idea that it is necessary for the teache*
at all times to keep before him the question of remote an
immediate aims.
2. Through studying examples of remote and immediat
aims to become able to determine his aims as a teacher

Formulation of aims. As we have stated elsewhere, it is nec
essary that the teacher appear before the class with well-thought
out aims. Otherwise his selection of devices and technique wi
be faulty. The amount of time that will be required will, o
course, depend upon the teaching experience of the one prepar
ing for the lesson. The teacher of considerable experience
especially if that experience has been in the subject for whic
preparation is being made, can often determine the aim of th
class while the group is convening. This, however, is not at al
possible for the beginning teacher. His aims must be fully
thought out in terms of the general and the specific. For som
time they should be written out also.

Formulation of general aim. The general aim, or purpose
for which a subject is taught should be clearly formulated i
the mind of the teacher long before he attempts any teaching
For, otherwise, how is he to determine the aims of the immedi
ate lessons, select his devices, and prepare his technique? Th
architect must know for what the building he is about to desig
is to be used, and the contractor must know the plans of th
architect, so that he may proceed step by step to the final accom
plishment. Or to use another illustration, the woodsman mus
know the direction in which the camp lies from his present posi
tion if each step is to count as one of a chain which is ultimatel

o bring him home. To fail to keep the direction of the final goal constantly in mind will mean wasted steps for the woodsman and wasted exercises for the teacher. The following is a list of suggested general, or remote, aims in teaching the various school subjects:

Reading

a. To give the pupils such a mastery of the mechanics of reading as will enable them to gather thought rapidly and accurately from the printed page

b. To give the pupils a vast range of vicarious experience

c. To develop in the pupils a liking for good literature

d. To develop through oral reading the capacity for oral expression

e. To enhance through expression the capacity for thinking

Writing

a. To enable the pupils with ease and facility to commit to writing such expressions as they may wish to use in conveying meaning

b. To enable the pupils to copy rapidly and accurately in script certain material found in the form of script or print

c. To enable the pupils to take such notes on lectures as will enable them to reproduce in some detail the substance of a lecture

Arithmetic

a. Accurately to solve such problems as the pupils are likely to meet with in everyday life

b. To give the pupils mastery of the fundamentals in number relationships

c. To enable the pupils to solve and appreciate, as far as they are capable of doing so, social and economic problems of a semiarithmetical nature. For example, if they are dealing with stocks and bonds, they should know something of the nature of these securities: What do they mean? How can one purchase them intelligently? What is the economic advantage and disadvantage of bonding? etc. These things should be studied in connection with learning to compute

d. For arithmetic at the high-school level we may add: To give an understanding and appreciation of the mathematical processes themselves

Spelling. To be able to spell such words as educational studies show will be used in general correspondence

Geography

a. To enable the pupils to orient themselves with respect to the terrestrial events about which they may read

b. To enable the pupils so to read maps as to guide their travels, especially when touring

c. To give the pupils an understanding of climatic and soil conditions in various parts of the world and their effects upon the life of man

d. To give the pupils an understanding of such geographical principles will enable them to interpret maps with respect to regional produ tivity and possible conditions of the climate in relation to health

e. To make the pupils acquainted with the meaning of various convention signs, such as contours, scales, and symbols for mountains

f. To give such knowledge of place geography as is frequently needed b the average citizen, for example, state capitals, manufacturing ce ters, etc.

6. History

a. To develop such an understanding of modern institutions through study of their origin and development as will encourage thoughtf participation in civic and social life

b. To prepare pupils to participate in civic and social progress by givi them a broad understanding of the progress of civilization, by d veloping ideals, and by noting recurring impediments in the path progress

c. To develop that love of one's country which will cause the future citiz to strive to identify his land with such ideals as humanity ca ultimately approve

d. To prepare the pupils to participate effectively in whatever wor citizenship is possible today

7. English

a. To give the pupils command of the art of expression in speech an writing

b. To enhance thinking by facilitating expression

c. To enlarge pupils' vocabularies and develop habits which will cau them to continue to increase their vocabulary when school days a over

d. To develop the ability effectively to grasp the thought of others throu the medium of oral expression

e. To prepare the pupils for the leisure hours of life by giving them bea tiful expression for thoughts which experience will bring to min by giving them an appreciation of literary expression which will cau them later to turn to literature as a source of life's deeper satisfa tions, and to bring about a firmer social unity through a comm body of literary experience

8. Civics

a. To give a knowledge of the forms and conventions developed in t exercise of government

b. To develop ideals and habits of good citizenship by a study of t development of institutions and by a practice of the functions citizenship

9. Economics

a. To give a general understanding of the organization of the econon system by which goods are produced and distributed

b. To instill ideals of efficiency in production and justice in distribution
c. To stimulate interest in any method designed to improve the working of our present economic system

10. Physics
a. To give an understanding of the simpler physical laws that operate in our daily lives
b. To give the ability to recognize the operation of those laws and to apply them to everyday problems
c. To develop an interest in scientific literature and to give a proper appreciation of the work of specialists in this field

11. Chemistry
a. To give an understanding of the simpler chemical laws that operate in our daily lives
b. To give the ability to recognize the operation of those laws and to apply them to everyday problems
c. To develop an interest in scientific literature and to give a proper appreciation of the work of specialists in this field

12. Geology: To give that comprehension of the nature and development of the earth which leads to a richer life through an interpretation of earth formations around us, through the pleasure which comes from contemplation of the wonders of nature, and through the satisfaction which comes from simply knowing

13. Physical geography
a. To give an understanding of the earth's surface
b. To use one's knowledge of the earth's surface in locating wells with respect to purity of water, etc.
c. To give the satisfaction which comes from knowing the cause of artesian wells, geysers, earthquakes, and similar phenomena
d. To give appreciation of beauty of nature

14. Biology
a. To give a knowledge of the simpler biological laws that operate in our daily lives
b. To develop the ability to use this knowledge of biological laws in the problems relative to personal health and to plant and animal husbandry
c. To give the knowledge of nature's ways which will result in the enjoyment that comes from appreciating one's surroundings
d. To develop the ability to recognize authoritative knowledge in the field of biology and the habit of using such sources of knowledge

15. Algebra
a. To develop the habit of generalizing and thinking in terms of symbols
b. To be able to solve such problems as are necessary to an understanding and effective use of physics
c. To lay the basis for further technical training for those who are to enter fields requiring higher mathematics

d. To develop the ability to understand and interpret graphic illustratio correctly

e. To appreciate the meaning of algebra in the development of civilizatic

16. Geometry
    a. To develop the habit of systematic thinking
    b. To give ideals with respect to rigid and objective demonstration of th which is held to be true
    c. To develop ability to visualize in the field of form
    d. To give such an appreciation of the beauty of form as will add one's sources of pleasure
17. Trigonometry: To develop a technique that is necessary for those wh are to enter such highly technical fields as engineering and surveying
18. Ancient language
    a. To increase the vernacular vocabulary by a knowledge of root-sten and affixes
    b. To increase the power of expressing our thoughts, through translatin from the ancient language into good vernacular
    c. To enable the student to interpret such Latin and Greek phrases are in common use in written and oral expression
19. Modern language
    a. To increase the ability to express thoughts in the vernacular, throug translating from the modern language into the mother tongue
    b. To enable the student to interpret such foreign phrases as are found the oral and written vernacular
    c. To enable those students who expect to travel or live in a foreig country more readily to pick up the language spoken there
    d. To enable the student to pronounce correctly the names of foreig people and foreign places
    e. To give that appreciation of the institutions, customs, and literatu of a foreign people which will tend to make the pupils cosmopolita and tolerant
    f. To break up the attitude of inevitableness which surrounds the o who has not experienced the customs and institutions of other people
    g. To prepare the pupils to seek the ideas of other people and prof by them
20. Agriculture
    a. To lay the basis for interest and effectiveness in agriculture by givi the knowledge necessary to an understanding of some of the fund mental principles underlying the treatment of soils, plant and anim husbandry, and farm management
    b. To provide for experiences and the development of habits relative rural life
    c. To develop ideals relative to rural life
    d. To develop the ability to see rural life in its relation to the remaind of society

Home economics

a. To give a well-rounded conception of the meaning of home-making

b. Not only to help the girl who will remain in school but also to give to the girl who will leave school at the end of the ninth grade such training that she may live more wisely and find her place in the working world

c. To arouse interest which shall lead to the more detailed elective studies later

d. To develop appreciation relative to efficient household economy which will result later in pleasurable participation in home responsibilities

Manual training

a. To develop skill in handling the common tools, so that the future man may be more useful in repair work around the home

b. To develop skill in reading and mathematics through the use of these subjects in connection with the shop

c. To give ideals of good workmanship

d. To lay a basis of citizenship through an interest in the productions of one's fellow men

e. To develop a skill which may be used later for avocational purposes

Formulation of specific aims. Having determined the general
m, or the remote goal, the next step is to determine the imme-
ate goals—those which are to be striven for in the lesson of
e day. When we have determined the remote aims we have
ented ourselves; hence it will not be difficult to keep the im-
diate goals so aligned that each in succession brings us nearer
e ultimate goal. Possible immediate goals that do not lead to
e desired end will not be striven for by the teacher who has
early in mind his ultimate goal. The teacher of a spelling
ss, for example, who has as his ultimate aim the ability to
ell correctly the words needed for general correspondence will
t spend time in trying to teach unusual words or words often
ad but seldom written.

Immediate aim generally compound. Lessons will differ with
spect to the singleness or manifoldness of the immediate aim.
hereas a lesson in spelling might have but one immediate aim,
esson in history would be almost certain to have many. These
mediate objectives, or aims, should be recognized in the les-
n plan. The following immediate aims are samples of those

which might be expected in any given lesson in the subject listed above:

1. Reading ("Little Red Hen")
   a. To enable the pupils to read the story of "Little Red Hen"
   b. To learn to recognize the phrases "Little Red Hen," "five little chicks," and "bake the cake"
   c. To develop an interest in "Little Red Hen" which will make the pupil want to read it over and over later
2. Writing (sixth grade—drill on making direct and indirect ovals and writing the words "Nine men in a mine")
   a. Especially to improve the making of the letter forms *n* and *m*
   b. To increase the speed of writing, through developing a cadence during the drill on ovals and attempting to hold to it when writing
3. Arithmetic (third grade—drill in the addition of single columns of ten or more digits)
   a. To increase the pupil's ability to add rapidly and accurately columns of digits of such a length as not to exhaust his span of attention
   b. To increase, if possible, the length of the pupil's span of attention in long columnar addition
4. Spelling (fourth grade—drill in spelling the following new words taken from Ayres's "Spelling Scale": drown, adopt, secure, honor, promise. Also the following previously learned words which recently have been missed by members of the class are to be redrilled upon: combination, neighborhood, entertain, salary, machine, success): So to master the words listed above that the pupils, in writing, will have no difficulty when they encounter them
5. Geography (sixth grade—Project: Consideration of the possibility of increasing the world's supply of rubber)
   a. To develop an understanding of the conditions in regard to climate and soil of the regions in which rubber is now found
   b. To develop an understanding of the present and possible future use of rubber
   c. To progress toward a world outlook by developing an appreciation of our dependence upon the activities of the rest of the world
6. History (reconstruction after the Civil War)
   a. To present the problems of reconstruction after the Civil War
   b. To have the pupils appreciate as far as possible the ruinous effects of war upon social, civic, and economic life
   c. To have the pupils compare the aftermath of the Civil War with that of the World War
7. Literature (life and works of Robert Burns)
   a. To enjoy the reading of Burns's poems
   b. To appreciate the poetic power of this man with so little opportunity for schooling

c. To appreciate Burns's poems in the light of the life he lived

8. English (written composition)
   a. The ability properly to coördinate and subordinate ideas in theme-writing
   b. The habit of paying attention to spelling when writing
   c. Increase of written vocabulary
   d. Improved grasp of ideas through the reduction of them to words
9. Civics (commission form of city government)
   a. To develop ideals in regard to the efficiency of city government
   b. To appreciate the harm done by bringing party politics into the filling of positions that need expert attention
   c. To stimulate an interest in community welfare
10. Economics (problem of labor unions)
   a. To develop an understanding of labor unions as the outcome of the industrial system
   b. To develop a scientific attitude of mind toward social problems in general and capital and labor in particular
11. Physics (levers)
   a. To develop a thorough understanding of the principle of levers
   b. To develop the ability to recognize, outside the classroom, situations in which a knowledge of levers may function
   c. To develop the ability to take advantage, in outdoor situations, of knowledge of levers
12. Chemistry (oxidation)
   a. To develop a thorough understanding of the principle of oxidation
   b. To develop the ability to recognize, outside the classroom, situations in which a knowledge of oxidation may function
   c. To develop the ability to take advantage, in outdoor situations, of knowledge of oxidation
13. Geology (glaciation in the Lake Maumee region of North America)
   a. A knowledge of the cause of the formation of Lake Maumee
   b. A knowledge of the present indications that such a lake at one time existed
   c. To stimulate a desire to read further into the history of this famous lake
14. Physical geography (weathering and erosion)
   a. To distinguish between weathering and erosion and to understand the causes of each
   b. To appreciate the time elapsed during the weathering and eroding of forms that may be seen
   c. To understand how these processes may be checked temporarily by means of oils, paints, etc.
15. Biology (adaptation of animals to environment)
   a. To understand adaptation in terms of natural selection and variation; in terms of the theory of Lamarck
   b. To develop a permanent interest in the problem of adaptation

16. Algebra (factoring the following types: $a^2 - b^2$, $a^2 + 2ab + b^2$, and $4m^3n + 3xm^2 + m$)
    a. Through inspection and analysis to have pupils discover how to factor $a^2 - b^2$, $a^2 + 2ab + b^2$, and $4m^3n + 3xm^2 + m$
    b. To drill on the foregoing types of factoring by using many representative problems until the pupils can factor readily any of the above types
17. Geometry (first, to prove theorem, "If two parallel lines are cut by a transversal the alternate interior angles are equal"; secondly, to discover and demonstrate as many corollaries as can be made to follow from the above theorem)
    a. To make sure that each student can demonstrate the foregoing theorem fully and without help
    b. To develop originality in discovering and demonstrating corollaries which follow from the foregoing theorem
18. Trigonometry ("Given two angles and the included side of a triangle, to find the length of the other sides and the size of the included angle")
    a. To show how the dimensions of the remaining parts of a triangle are found when two angles and the included side are given
    b. To drill in finding the size of the remaining parts of a triangle when two angles and the included side are given
    c. To increase the pupils' facility in the use of trigonometric tables
19. Ancient language (one page of Latin sentences to be translated from Latin into English, the meaning of ten new Latin words to be learned and an introduction to the ablative construction)
    a. Ability to translate at sight the sentences given in the lesson
    b. Recitation and drill which will result in the mastery of ten new words
    c. To fix in mind more firmly Latin words previously learned
    d. To master the form and use of the ablative construction
20. Modern language (to translate ten pages of Labiche and Martin, *Le Voyage de Monsieur Perrichon*)
    a. To perfect the ability to translate the assignment at sight
    b. To fix more firmly in mind French words previously learned
    c. To enlarge French vocabulary
    d. To perfect the pronunciation of French words
21. Agriculture (soils)
    a. Ability to recognize the types of soils found in the neighborhood
    b. Knowledge of the properties of soils in relation to capillary action
    c. Knowledge of means of conservation of soil water
22. Home economics (food and digestion)
    a. To develop a satisfactory answer to the question, "Why do we need food?"
    b. To give the pupils a knowledge of the classes of food and of their use in the body
    c. To develop an outline of the classes of food

3. Manual training (Project: To make a hall-tree)
   a. To increase skill in using tools
   b. To increase ability to carry out a project in accordance with a previously designed pattern

SUMMARY OUTLINE

The student should study the following outline with a view o preparing himself for the observations which follow.

Analysis of devices
a. General physical devices
   (1) Textbooks
   (2) Reference books
   (3) Mimeographed sheets
   (4) Blackboards etc.
b. Special physical devices
   (1) Rulers
   (2) Compasses
   (3) Graph paper
   (4) Drawing pens
   (5) Notebooks
   (6) Protractors
   (7) Slide rule
   (8) Maps etc.
c. Intellectual devices
   (1) Lesson types
      (*a*) Development (conversational and expository)
      (*b*) Recitation
      (*c*) Project
      (*d*) Experimental
      (*e*) Drill
   (2) Examination types
      (*a*) The final examination
      (*b*) Unexpected ten-minute written exercise
      (*c*) "True-false" test
      (*d*) Multiple-choice test
      (*e*) Incomplete-sentence test
   (3) Disciplinary devices (see Lesson IX)
      (*a*) Corporal punishment
      (*b*) Humiliation before class
      (*c*) Conferences with the trouble-maker
      (*d*) Extra work
      (*e*) Social disapproval

2. Analysis of technique
   a. Arranging for proper physical conditions, such as heating, lighting, venti-
      lation, cleanliness of room, orderliness of room, before the pupils ente
   b. Adjusting poise, voice, personal appearance, to best advantage
   c. Arranging the seating of the pupils so as to avoid disciplinary problem
      and so as to meet their physical needs
   d. Keeping up enthusiasm
   e. Assigning lessons
      (1) Assigning lessons at the proper time
      (2) Making assignments clear and effective
      (3) Assigning reference reading so that the pupils can obtain the ma-
         terial with a proper amount of effort
      (4) Placing reference books where they may be readily obtained
      (5) Checking up on outside readings assigned pupils
         (*a*) Written reports
         (*b*) Oral reports
   f. Disciplining class (see Lesson IX)
      (1) Being firm
      (2) Being fair
      (3) Noting all without nagging
      (4) Avoiding overemphasis of trifles
      (5) Keeping democratic attitude
      (6) Meeting pupils for a personal conference
      (7) Keeping temper
      (8) Respecting personalities of the pupils
      (9) Sizing up a disciplinary situation quickly
      (10) Anticipating trouble and preventing it by counter-suggestion
   g. Using blackboards and other devices to the best advantage
   h. Teaching class
      (1) Formulating objectives before the lesson begins
      (2) Giving the pupils at the beginning of the lesson a clear statemen
         of their objectives
      (3) Carefully thinking out the method of procedure in advance o
         determining the method after the class meets
      (4) Preparing questions in advance of class or asking them spon-
         taneously as the class progresses
      (5) Asking constructive questions that lead in an orderly manner t
         new inferences on the part of the student
      (6) Skillfully framing questions that stimulate the pupils to use know
         facts in their quest of the unknown
      (7) Skillfully framing questions that test the pupils' knowledge o
         factual material
      (8) Framing questions that are unambiguous
      (9) Directing questions to the class rather than to one pupil
      (10) Asking each question slowly and with an inquiring voice

(11) Projecting the voice to all parts of the room
(12) Enunciating clearly
(13) Using correct English
(14) Keeping within reasonable limits the number of questions asked
(15) Encouraging the pupils to ask questions of the teacher
(16) Encouraging pupils to question a member of the class who is reciting
(17) Leading pupils in settling a new problem to pool the facts which they have gathered from reading or experience
(18) Occasionally sitting among the student body while leading a discussion, thus tending to turn the discussion over to the class
(19) Standing in such a position while conducting a developmental-exposition lesson that all can observe the teacher
(20) Keeping illustrations within the experience of the class
(21) Choosing illustrations with discretion; that is, refraining from antagonizing the members of the class or the community
(22) Speaking fluently
(23) Using a vocabulary within the range of the pupils' knowledge of words
(24) Putting drill questions rapidly
(25) Keeping drills short in duration and frequent in occurrence
(26) Beginning and ending lessons on time

3. Analysis of lesson outcomes expressed in terms of neural changes
a. Increased comprehension
b. Increased strength of neural bonds underlying recall
c. Increased physical skill
d. Increased mental skill
e. Increased moral insight
f. Increased strength of moral habits
g. Increased appreciation
h. Increased power of expression
i. Increased use of thinking capacity
j. Increased initiative

GUIDE TO OBSERVATION AND REPORT

No observation will accompany Lesson XVIII. The student should hold a conference with the supervisor, who should make clear any difficulties.

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LESSON XIX

im. *To determine by observation the immediate and remote outcomes of the lesson.*

It seems a commonplace to state that the teacher should know hat he is about to do before entering the classroom. One will nswer such a statement with an "Of course," for one would ever think of entering any other field of activity without some ell-defined objective in mind. Yet that often happens in the resent-day schoolroom and, I think, more now than in the past. his situation is probably owing in part, at least, to the fact hat at present there is some confusion among leaders of educa- ional thought as to just what the goals are which are possible nd worthy of attainment. Some would strive almost entirely or disciplinary values; others, at the other extreme, would rain only for specific abilities, expecting no general transfer. ome greatly emphasize the vocational aim, others the civic- ocial aim, and still others the cultural.

With this state of affairs existing in the centers of educa- ional thought it is not to be wondered at that the classroom eacher is not entirely clear on the remote aims of his efforts. But until he is clear about this matter and has some working hilosophy of education, be it good or bad, haziness concerning mmediate classroom aims is sure to result. It will help, how- ver, to list the possible remote outcomes as we have done in esson XVIII and to settle upon one or more of them as the oals toward which immediate outcomes of any given lesson re to be directed.

Settling definitely upon an outcome has at once the advantage f enabling us to select appropriate devices in advance. The

power of expression, for example, cannot be developed by lesson in which the pupil has no opportunity to express himse The skilled workman decides what he wishes to construct a then selects his tools with reference to the task he is about perform. The principle is the same in both cases. It is t complexity of our task and the difficulty of measuring c progress which cause us as teachers to overlook the need applying it here.

Not only does the selection of immediate goals enable us choose our devices wisely; it determines also, in a large measu the mode of applying those devices to the task at hand. hammer, which is a device, will be used largely for driving na if one is making a crate, but for drawing nails if one is taki a crate apart. Likewise, the technique of questioning will diff depending upon the outcome desired. If the outcome of t lesson is the strengthening of neural bonds and the device is t drill (by means of question and answer), the method of app ing the questions will differ from that used should the outco be increased comprehension and the device the developmen question. This difference will be discussed later. It is our pu pose here only to point out the fact that a difference of tec nique is to be expected and that one should first have a cle notion of the outcome intended.

The outcomes expressed in terms of neural changes for whi the student should observe were listed above as follows:

1. Increased comprehension.
2. Increased strength of neural bonds underlying recall.
3. Increased physical skill.
4. Increased mental skill.
5. Increased moral insight.
6. Increased strength of moral habits.
7. Increased appreciation.
8. Increased power of expression.

9. Increased use of thinking capacity. (This power is ught about through improved habits and technique.)
o. Increased initiative.

Locating immediate aims of teacher. If the teacher is con-cting a well-organized lesson, it ought not to be difficult for student observer to locate his immediate aims. Every device uses reflects some aim. There is no such thing as an aimless son in the sense that the teacher has no immediate objectives. wever, the lesson may be aimless in the sense that those mediate objectives are not in the direction of well-defined imate objectives.

Two criteria effective in determining immediate aims. The o criteria most effective in determining the immediate aims the selection of devices and the technique of their use. To strate, one can tell something of the nature of the immediate n of the workman by the tools or devices which he selects for day's work. Further light may be shed upon his intentions observing the manner in which he employs these devices. If, example, he picks up a shovel rather than a spade, the on-ker may expect that he is going to fill a hole rather than dig. wever, further observation will be necessary to determine th assurance his intentions. If he begins work by sinking e shovel straight into the ground, pressing on one side with e foot, we may conclude that the further evidence does not ostantiate our first hypothesis and that he really intends to g a hole. Likewise, one may postulate the intentions of the cher who sets forth with certain material and intellectual vices. The drawing down of maps or the request that the pils open their books is indicative of certain aims. Observing ether the teacher points out positions on the map or reads for e pupils while they watch their books, or whether some pupil selected to locate the desired place upon the map or to read e chosen selection, will aid still further in determining the

aim. As in the case of the workman one cannot determine t aim until the process is well under way, so in the case the teacher it is necessary to wait until results begin to appe before being certain of the immediate aim.

After listing the immediate aims the observer is in a positi to locate the more remote goals toward which they are leadi If, in the case of the workman (to continue the analogy), v find that he digs four holes twenty or thirty feet apart, arrang in rectangular form, we may conclude that he is going to bui either a garage or a poultry yard. The immediate aim of diggi the holes has been noted, but it alone will not in this case poi with definiteness to the ultimate purpose. In most cases t size and depth of the holes would be indicative of his furth intentions. Let us assume, however, that the owner builds on light and temporary buildings, and that he is in need of a gara and also of a poultry yard. We must wait until a further imm diate aim is discovered. We now observe that he cuts pos which when set protrude about four feet above the groun This immediate aim is more in keeping with a poultry ya than a garage, but it is not quite sufficient. We next obser that he brings forth a roll of finely woven wire. We are no safe in stating that the ultimate goal is a poultry yard.

Are immediate goals legitimate? The question of the legi macy of the immediate goals is an important one: it matters n with what skill they have been attained; they are useless unle they lead to a desirable outcome. They are valuable to t extent to which they lead with precision to that outcome. T workman referred to above may waste his time by digging hol in the wrong place or by digging them too large or too dee So with the teacher. The time spent on memorizing somethi that in no way affects the ends of education is time worse tha wasted, for it gets the pupils nowhere and precludes possibiliti of attaining valuable goals. It is possible also that while t

mediate goals lead to a desirable end, they do so by a circui-
us route, thus causing waste. For example, the ability to spell
e words needed in writing may be attained by the study of
ch words as have been found to have spelling value because
ey are used in writing, or by studying long lists of unselected
rds. The goal attained is the same in both cases. The one
o accomplished the result through the roundabout course has
tained no more in the direction of the goal than the one who
ok the direct course. The time spent in the blind alleys is
t, for only progress toward the desired ultimate goal counts.
Immediate goals are such as may be aimed at directly in any
ven lesson. That the student may more readily recognize the
mediate goals of the lesson we will say that they are the
es for which the teacher immediately strives. For example,
e spelling teacher may strive to develop in the class the ability
spell a given list of words. This might be considered one
the immediate aims of the lesson because it is a unit of accom-
shment for which the teacher is directly striving and because
leads to a more remote goal toward which the teacher may
rk less directly, that is, social and civic efficiency.

GUIDE TO OBSERVATION AND REPORT

1. List the immediate goals toward which the teacher seems to
striving.
2. Study the immediate goals to determine the more remote goals.
3. Do you consider the more remote goals legitimate?
4. Are the immediate goals well aligned with respect to the more
note goals?

NOTE. The student will find it profitable to read also Lesson XXVIII,
241–249, in this connection. A study of the illustrations used there to
w the relation between immediate and remote goals will add significance
his observation. If necessary, the student should confer with the super-
ng instructor.

The following is a sample report of an observation acco
panying Lesson XIX:

OBSERVER: XXX

SCHOOL: XXX

CLASS: History, Seventh Grade

The class had read Chapter XVI of Long's *America* and w
considering the weaknesses of the Confederation and the need
a stronger and more centralized government. As immediate a
the teacher seemed to have in mind the development of und
standing and appreciation on the following points:

1. The need for a united government.

2. The difficulties in the way of union.

3. The place of the Articles of Confederation in the transit
from thirteen sovereign states to a genuine union.

4. The provisions and effect of the Ordinance of 1787.

5. The spirit and accomplishment of the Constitutional Conv
tion of 1787.

These aims were well attained as far as knowledge of the fa
was concerned. It was not so easy to determine the extent
which aims 1 and 5 were accomplished. The lesson was well taug
The teacher's effort was clearly directed upon the immediate o
comes listed above.

The entire lesson seemed to be focused upon the ultimate o
come of civic-social efficiency.

LESSON XX

n. To determine the type of lesson which is being observed and to evaluate it with respect to the immediate and ultimate goals for which the teacher is striving.

Selection and use of lesson type. Once a given type of lesson elected it becomes one of the devices by which the teacher is attain the immediate goals for which the lesson is to be nned. Hence, as a device, its success will depend upon the ll with which it is used, as well as upon its fitness for the task hand. Of course the type of lesson will depend upon the come that the teacher wants. If, for example, he wishes to engthen certain neural bonds so that responses to given nuli will be more or less automatic he will use the drill lesson. he wishes to increase comprehension the expository or consational development will be more fitted to the task.

The task of adjusting the modes of instruction to the outnes desired is difficult. One who observes teaching frequently ls many instances of modes which are poorly adapted to the k at hand. Conversational modes are used at times when y drill can be effective. A combination of conversation and l is used when one or the other should be used exclusively, If the modes are well chosen with respect to the immediate goals it will follow that they will be chosen properly as ards the more remote goals, for the remote goals are atned only through the attainment of those which are nediate.

A mode of instruction may be suited to the attaining of a goal yet, due to poor technique or the faulty selection of the ompanying devices, the teacher may fail to attain the out-

come for which he is striving. This, however, is no fault o the lesson type. The success which he meets will depend upo his skill in using this device. Will he go about it deductively o inductively? With what skill will he frame his questions? Wit what degree of skill will he deliver those questions? Whethe he goes about it inductively or deductively will depend muc upon the knowledge which the pupils have at hand and th nature of the knowledge which he desires to bring forth. Afte noting the technique and modes of instruction used, the studen observer will note the success which the teacher attains b satisfying himself as to the degree to which the pupils seen to have mastered the material. And, finally, he will determin as far as possible the extent to which success or failure is du to improperly selected modes of instruction, or, if the modes o instruction are appropriately selected, to a lack of skill in th teaching process itself.

GUIDE TO OBSERVATION AND REPORT

1. List the immediate goals toward which the teacher seems t be striving.

2. Note the modes of instruction which the teacher uses durin the class period.

3. Are the modes of instruction used well adapted to attainin the lesson goals?

4. Are the immediate goals directed toward a legitimate remot goal?

5. What change, if any, would you make in the immediate goal and consequently in the modes of instruction used?

6. Justify the changes you would make in the immediate goal and the consequent changes in modes of instruction.

NOTE. It is not always possible to determine all the immediate goals fo which the teacher is striving before the end of the hour. Hence it is impossib to evaluate fully the modes of instruction used until the class is dismisse Then, the student, with the lesson as a whole in mind, is in a position t evaluate critically the goals represented and the modes of attaining them.

The following is a sample report of an observation accom-nying Lesson XX:

OBSERVER :	XXX
SCHOOL:	XXX
CLASS:	Algebra

The immediate goals in the mind of the teacher seem to have been:
1. To be able to set up equations using algebraic symbols as an erpretation of prose problems.
2. To create an interest in prose problems.
3. To enable the pupils to apply algebra to concrete situations d everyday problems.

The type of lesson which the teacher uses is conversational de-opment. This type is well adapted to attaining the lesson goals. e teacher asks questions of the pupils and helps them set up uations that apply to the particular problem under discussion. some of the problems which deal with actual facts, as the date entrance of different states into the Union, the result obtained the use of algebra is checked with the actual date, and they found to be the same. In this way a little touch of interest is led to the work.

The remote goal in the mind of the teacher is probably to teach ebra to the pupils and to teach it in such a way that they will ve a good foundation for the mathematics which comes later. e immediate goals are directed toward this remote goal. I uld make no change in the immediate goals for this lesson and sequently would not change the method used. The teacher ms always to have his immediate goals in mind and works ward that end. No doubt he has his remote goals also in mind l gradually works toward them.

The following is a stenographic report of a lesson in first-de reading. It should be read in connection with Lesson XX.

Teacher. You are going to hear a story about a little boy. Do you pose you would know the name of the story if you looked upon board?

Pupil. Gingerbread Boy.

T. Can you find it for us?

P. There it is.

T. What do you suppose the little boy was made out of?

P. Dough.

P. I do not see how he can run.

T. There was a little old woman and a little old man, and they h a little old kettle, and they had a little old pan, and so they made little old Gingerbread Boy. She put the little old Gingerbread Boy the little old kettle, and the little old kettle in the little old pan. T Gingerbread Boy upset the little old kettle and ran away. Would y like to read this story?

P. Yes.

T. Well, we are going to do two things. We have not enough boo for everybody to read and we have not enough chairs, so the folks their seats are going to have some paper and they are going to cut o the Gingerbread Boy and the kettle and the pan. The ones that I tou may get chairs and bring them up here and put them in a circle; and am going to give the other people some of this brown paper, and th can cut out the Gingerbread Boy and the kettle and the pan. We cann all read at once, and you are going to tell the story with the paper; a next time you will read.

P. We did not know what we were going to do.

P. I thought there was big bears in these books.

T. See if you can find the Gingerbread Boy.

P. Oh, look at that!

T. Find it?

P. Yes, I did.

P. I got it.

T. These girls have it all right.

P. I have it.

T. What page is it, Ethel, and what does it say at the first of t story?

P. "Little Gingerbread Boy."

T. Someone said, "Little Gingerbread Boy." Well, we are going look at it in a minute and see if we can read it. You read, Helen.

P. "There was a little old woman and a little old man. They had little old kettle and a little old pan."

T. That will do. Do you see any words that sound alike in the story

P. "Kettle" and "little."

T. "There was a little old woman and a little old man. They had a tle old kettle and a little old pan."
P. "Man" and "pan."
T. Next.
P. "The little old woman had made a Gingerbread Boy."
T. How do you suppose she made it?
P. Dough.
T. Did you ever see anybody make a man out of dough?
P. I did.
T. Let me tell you another story about a little old lady. She made a ngerbread Boy. She took some eggs and sugar and ginger and some tter and some flour and some molasses and some soda and stirred it up and patted it out as flat as she could; and she took her knife, and is is the way she did it. You help. She cut out his teeth and cut out s arms and put raisins in for his eyes and raisins in for his buttons. t us read. Come on, Mary.
P. "She put the Gingerbread Boy in the little old kettle under the tle old pan. The Gingerbread Boy upset the little old kettle and the tle old pan and ran away."
T. Yes. Here he is! See! Look! What a funny little old man and oman! Do they live in this country?
P. No.
T. How do you know they don't?
P. They don't wear the kind of clothes we wear and the kind of shoes. hat a funny dress and what a funny hat!
T. Is it a hat?
P. Yes.
T. Yes, I think it is a hat. Let us read.
P. "'Stop, Gingerbread Boy,' cried the little old woman. 'Stop, ngerbread Boy,' cried the little old man."
T. Is that right?
P. No, he said "cried," and it is "called."
T. Now, Lester, read it again.
P. "'Stop, Gingerbread Boy,' called the little old woman. 'Stop, ngerbread Boy,' called the little old man. 'Stop, Gingerbread Boy,' lled the little old kettle. 'Stop, Gingerbread Boy,' called the little old n. They ran after the Gingerbread Boy, but they could not catch him."
T. See, here they go. Do you see the kettle and the pan? I thought e pan was round.

P. I did, too.

T. Would your mammas make a pie in that kind of a pan?

P. No. Did the cat catch him?

T. Well, we shall see.

P. "The Gingerbread Boy met a cat. The cat said, 'Stop, Ging bread Boy.' The Gingerbread Boy said, 'I ran away from the little woman, the little old man, the little old kettle, and the little old p and I can run away from you.' So the Gingerbread Boy ran on. T cat ran after him, but he could not catch him."

T. Next.

P. "The Gingerbread Boy met a dog. The dog said, 'Stop, Ging bread Boy.' The Gingerbread Boy said, 'I ran away from the little woman, the little old man, the little old kettle, the little old pan, a the cat, and I can run away from you.' So the Gingerbread Boy ran o

T. All right, Dorothy.

P. "The dog ran after him, but he could not catch him."

T. Mary.

P. "The Gingerbread Boy met a pig. The pig said, 'Stop, Ging bread Boy.' The Gingerbread Boy said, 'I ran away from the little woman, the little old man, the little old kettle, the little old pan, and cat and the dog, and I can run away from you.' So the Gingerbread B ran on."

T. Next.

P. "The pig ran after him, but he could not catch him."

T. What is this?

P. The hen.

T. Just see what a funny little house this is!

P. "The Gingerbread Boy met a hen. The hen said, 'Stop, Ging bread Boy.' The Gingerbread Boy said, 'I ran away from the little woman, the little old man, the little old kettle, the little old pan, and cat and the dog and the pig, and I can run away from you.' So Gingerbread Boy ran on."

T. All right, Gordon.

P. "The hen ran after him, but she could not catch him."

T. All right, Sylvia.

P. "Now the Gingerbread Boy met a fox. The fox said—"

T. What does he say, James?

P. "I ran away from—"

T. James, you read it.

P. "Now the Gingerbread Boy met a fox. The fox said, 'Stop, ngerbread Boy.' The Gingerbread Boy said, 'I ran away from the tle old woman, the little old man, the little old kettle, the little old n, and the cat and the dog and the pig and the hen, and I can run ay from you.'"

T. Next.

P. "The little Gingerbread Boy ran on. The fox ran very fast after n and caught him, and that was the end of the Gingerbread Boy."

T. What did he do with him?

P. Eat him.

T. Ate him. You should say "ate." Do you know, I read a story out this, and it said they came to a stream and the fox said, "Jump on my back, and I will take you across." The little boy jumped upon back, and when they were in the stream the old fox said, "Jump on my head." And when they got across, the old fox threw his head and—snip, snap, snapped.

P. Miss Gaddis, I never got to read at all.

T. You can read some other time. Let's close our books. John, go ck to your seat. Well, I wonder how these pictures are back here. ell, I see some fine Gingerbread Boys and some fine kettles and pans. me here, Paul. Paul is going to take his up to let us see them. We nnot see with people standing in the aisle. You will have to sit down, we can all see. Bring yours, George. Take yours. Take yours, too. ke yours, James.

P. Here is a pan.

T. Put them up so we can all see them. I saw some more good ones, t we will just look at these. See here, what a fine big kettle and pan, ly his pan is not very —

P. Round.

T. This Gingerbread Boy is not very large; and I don't see any ttons on his coat, but he is a pretty nice boy.

P. The Gingerbread Boy ran away.

T. Sh! sh! See, here is a fine one. Don't you think the pan is und? Your mamma would not bake a pie in a pan that was not round, uld she?

P. No.

T. Let's see, Forrest. Where is your kettle? This little boy hasn't y head, has he?

P. No.

T. And he hasn't any buttons on his coat. Now look at James They are all very good. Should you like to have some paper to pas them upon?

P. Yes.

T. All right, we will have some paper to paste them upon, and tho little folks who did not read are going to read the story next tim Should you people who read like to make a Gingerbread Boy?

P. Yes.

T. All right.

The following is a report of an observation accompanying th foregoing stenographic report:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Primary Reading

The immediate goals in the mind of the teacher seem to hav been:

1. To enable the pupils to recognize and read in context such ne words as were found in the story of "The Gingerbread Boy."

2. To create an interest in the story of "The Gingerbread Boy especially on the part of those who, through lack of books, coul not participate in the reading.

3. To develop the habit of observing form.

4. To develop dexterity in coördinating hand and eye in cuttin out such forms as were represented in the lesson.

The type of lesson used was the conversational-development.

The immediate goals were all directed upon legitimate remot goals.

The teacher's methods were effective, as the immediate goals and 2 seemed to be well attained.

LESSON XXI

im. To appreciate the selection and use of general material devices with a view to developing skill in the selection and use of them.

Use of texts and reference materials. The most frequent eneral physical device employed is the book—textbooks and eference books. In order to use the book most effectively the esson must be carefully assigned each day. A certain amount f the teacher's daily preparation should have this end in view. he part of the class period given over to the new assignment ill be our first consideration. Many teachers wait until the end f the hour and then in great haste assign to page so-and-so. his is the least effective type of assignment. Logically the end f the hour is the proper time in which to make the next assign-ent. The teacher is then aware of the shortcomings in the resent lesson. Moreover, if the entire lesson has not been cov-red in the class, the remaining part may be included in the new ssignment. Inasmuch as many teachers fail to organize and arry out a lesson so as to leave ample time at the end of the eriod for making the new assignment, some have suggested hat it be made at the beginning of the period. This is making ne bad feature the pretext for another. It is just as easy for he teacher to save the proper time for the new assignment as it s to complete the lesson at the end of the period. The main onsideration in deferring the assignment is that the pupils will ot have the background until the day's lesson is over. Then, oo, a certain warming up and motivation that should take place uring the class period are advantageous in that, along with the dded background of understanding, they give a basis of in-

terest in the new assignment. This interest is almost necessa
if the pupils are properly to prepare the work for the followi
day. It is possible to assign the lesson for the following day
reference to the coming lesson at various points throughout t
period. This method is valuable but should be followed
a restatement and summary of the assignment at the end
the period.

Clearness of assignment. The assignments "Take the ne
five pages" and "Work the next ten problems" are definite on
in the sense that they define the field of study. They are n
definite in that they do not set up definite goals, give clear dire
tions as to the way to attain those goals, or give criteria
which the pupils can determine when a goal has been attaine
Of course the age of the pupils will be a factor in determini
the amount of detail into which it will be necessary to go
meet these three requirements of a well-assigned lesson. T
ultimate aims of education will demand also that more a
more exercise of initiative and judgment be required of t
pupils as their age and experience increase. Although the pu
in an early grade should be told in detail just what to aim f
how to attain the goal, and how to determine when he has a
tained it, so much explanation would be totally unnecessary wi
the graduate student. The pupils must, however, have sho
some ability to study before detailed supervision of this sort c
be lessened. This lessening cannot be done all at once, but mu
come gradually as the pupils develop. We are told that ma
German students who enter the university from the Gymnasiu
lose a great deal because in the university they are thrown
most entirely upon their own ingenuity, whereas in the Gy
nasium they were under the strictest supervision. This is
course owing to a failure to achieve a desirable end of educati
in the teaching process. We want to help the student to
effective studying, but at the same time we must keep in mi
that it is also our duty to make him self-reliant and resourcef

Because of the lack of proper training which at present exists in most of our elementary schools, it is not safe to assume that high-school pupils can be relied upon to study effectively unless fully definite and detailed assignments are made in both the text and the supplementary material. Bear in mind, however, that the student is not adequately trained for future life until he will go to outside sources on his own initiative and verify and supplement the text or the discussion. This again means that the teacher must gradually lessen definite assignments and expect full preparation on the part of the pupils. The extent to which his expectations in this regard are met will be in general a function of the earlier training to which the pupils have been subjected. The teacher may find it necessary to return to rigid assignments and gradually create abilities that will make for independence and self-reliance in the matter of study. This is one of the most important outcomes of education, and the teacher who can attain it and not lessen the efficiency of the class preparation is in this respect truly a master.

Technique of turning over to pupils full responsibility for preparation of lessons. How to make the individual self-reliant is not so easily stated as the fact that he ought to be made self-reliant. There is plenty of room for experimentation in this field. We can give here only a few general directions. We have stated above that the process must be one of gradual growth. But this is only a general statement which would be equally applicable to all growth. Growth contains no gaps.[1] The first specific direction with respect to this activity is that the student should gradually become responsible for the verification and elaboration of the text through locating and taking advantage of sources of information beyond those assigned. Special credit should be given for this additional work. The writer suggests that A-grades be reserved for those who show this type of initiative. The class should be told that, although this additional work is not a guaranty of an A-grade,

no A-grade can be issued without it. This practice makes grad ing more than a mere device for stratification of the pupils; now becomes a teaching device as well.

A second step in the process of developing initiative of attac on the part of the pupils will be to have them formulate the study aims for the coming lesson. It will tend to cause readin with a purpose in mind, which is in itself a necessary and im portant step leading to the ultimate goals of education. Thi stating of the aim should be accompanied by an advance con sideration of the assignment with a view to evaluating the ac vance topics. This will lead not only to reading with a purpos in mind but to a critical evaluation of the material topic b topic. This process might well go on simultaneously with tha of attaining initiative in the collateral investigations.

Another consideration is that of letting the pupils determin the amount of text which should be studied to meet properl the aims of the coming lesson. This, of course, will deman developmental questioning on the part of the teacher. He ma sometimes be forced to go contrary to the judgment of the class but the necessity for his doing so will probably grow less an less as this sort of training progresses.

We see by the foregoing consideration of the problem tha the matter of lesson assignments is a very important one, for i offers an opportunity to advance toward some of the most im portant outcomes of education. It is truly a large part of th process of supervised study and will do much to eliminate one o the severest criticisms launched against American educatio namely, that it results in intellectual docility. The teacher ma complain that fully to carry out such assignments would mea too much time taken from the discussion of the class work as h now knows it, but in doing so he is likely to be mistaking th chaff for the wheat. It is not the ground covered but the habit of thinking and the skills accomplished that weigh heavily whe all has been said and done.

Importance of making previous preparation function in ecitation. It is not enough to assign effectively lessons to be repared. The teacher must so conduct the class exercise that his preparation can be used by the student, and those who have ot prepared will feel they have lost out. Otherwise even the est students will gradually give up the habit of serious prepa- ation. Check tests, such as are described in Lesson XVII, p. 166–175, may be given once in a while in advance of dis- ussion to determine who has read the material. They should ot be used to the exclusion of the essay tests, for they usually est only the facts gained and not the ability to apply those acts in the thinking process.

Lesson assignments should motivate pupils. The lesson as- ignment should be so made as to arouse on the part of the upils an interest in the sources to be investigated. This is to e contrasted strongly with the former type of motivation, which sprang from fear of the teacher. If, to use an illustration iven by Dr. Herbert H. Foster, in assigning a history lesson ve say "What similarity do you see between the causes of the American Revolution and the French Revolution?" or in assign- ng an English lesson, "See if you can determine the motive of Portia in demanding the ring from Antonio," we have given a eal motive for study. We have raised a problem to be solved y thoughtful reading. The pupils will attack such a lesson in way in which they will not attack one that has not been roperly motivated.

Amount of assignment. The length of the assignment is an mportant matter in developing the habit of preparation. If uch assignments are made as are impossible for the pupil to over in the time allotted, the teacher has forced an exception o the regular preparation of the lesson and thereby has made t less likely that the student will prepare properly when other timuli compete with the lesson. Likewise, the difficulty of reparing should not be beyond his ability to accomplish. For,

as in the case of too long a lesson, too difficult a lesson is likely to interfere with the habit of lesson preparation.

Selection of reference material. The reference material assigned by the teacher should have been selected with great care. He should seldom trust his memory to the extent of making assignments of collateral material without reading it himself. In this way he makes sure that it contains the ideas which he thinks it contains. He has refreshed his mind and is now better able to determine what the student should get from the selection. Reading the material before assigning it will also aid him in meeting the danger of assigning too much or too little.

Use of dictionaries. The dictionary is a general device, for if properly used it will have a place in all rooms in which study is going on. The pupils should be able to find the words. The teacher should make sure that they are familiar enough with the diacritical marks to discover readily the correct pronunciation. They should also be aware of the fact that many usages of a word may be given (some of which may be obsolete), that the meaning of a word often varies (depending upon the connection in which it is used), etc. Along with a thorough familiarity with the use of the dictionary should go the dictionary habit, which will prevent pupils from attempting to guess from the context the meaning of a word. This habit results in the gathering of false ideas and also unfits the individual for the accurate reading that successful living requires. The student observer in making observations of the teaching should make special effort to determine whether or not the pupils have the knowledge, skills, and habits that will make them constant and efficient users of dictionaries.

Use of blackboards. The first consideration in the use of boards is that the material be placed, if possible, upon the part of the board from which all can see it easily. The material should be neatly arranged and should be written large. If the

room is improperly lighted, care will have to be taken that cross lighting does not obscure material which otherwise would be seen by all. The effective use of blackboard illustrations as class discussion progresses is a valuable aid to teaching. Outlines and summaries should be placed upon the board as they are worked out by the class. Conceptions attained through the eyes as well as the ears are likely to be more lasting. Then, too, the use of boards has especial value in that the work of many can be observed at once. The student observer will do well to note carefully the teacher's technique with respect to use of the blackboards.

Use of mimeograph. Any considerable use of mimeographed material in the teaching process is questionable. In the first place, outlines should be developed with the class and should not be handed out fully prepared. Once they have been developed, copying them from the board and later inserting them in good form in notebooks is a further aid to fixing them firmly in the minds of the pupils. There will be many occasions, however, such as rise in giving out laboratory directions and check tests, when the pupils' time and energy may be greatly saved with no educational loss by the use of mimeographed sheets.

GUIDE TO OBSERVATION AND REPORT

1. List the immediate aims.

2. Note whether or not the general material devices are well selected with respect to the immediate aims.

3. Note whether or not the general material devices are skillfully and effectively used.

4. Is the lesson assigned at the beginning or at the end of the class period?

5. Discuss the nature of the assignment.

6. Discuss the use of the other general physical devices

The following is a sample report of an observation accom
panying Lesson XXI:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Algebra 9B (Radicals)

1. The immediate aims of the lesson were:

a. To develop ability in dealing with radicals.

b. To review mathematical abilities previously developed.

c. To develop interest in mathematical problems.

2. The following material devices were used:

a. Text, in which problems were assigned for work.

b. The board, used considerably throughout the lesson.

c. A book which the teacher had obtained from the library ar which contained interesting problems and solutions involving mar common fallacies.

d. Paper and pencils, by pupils working at desks, while othe were putting problems upon the board.

The text seemed to me to be used effectively. The teacher fir called for problems that gave difficulty. When these were locate pupils who had solved them were asked to put them upon the boar As soon as these problems were explained the teacher assigned th lesson for the following day. The assignment contained onl problems found in the text. The teacher made the assignment wit some care. She anticipated their difficulties and with the aid of th pupils solved a few typical problems upon the board. The teach did the writing; the pupils gave the steps and figures.

All in all, the board was used very effectively. As was said b fore, the teacher had those problems that gave difficulty place upon the board. They were placed upon the board in the rear the room rather than at the front. I asked her after class if the was any purpose in this, and she replied in the negative. I thoug it would have been better to put them upon the front board.

After the problems that gave difficulty had been explained, th teacher assigned drill problems to be worked by the class as

hole. While most of the class worked these drill exercises at their sks with paper and pencil, a few pupils were selected to work on the board. With each change of problems the group working the board took their seats, and others went to the board. The acher explained after class that this procedure broke the onotony for the pupils.

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LESSON XXII

Aim. *To appreciate the selection and use of special physic devices with an aim to developing skill in using them.*

The following is a stenographic report of a lesson in seventh grade arithmetic:

Teacher. Open your books to page 281. How many of you hav heard of "circumference," "diameter," and "radius"? [Many hand raised.] We are now taking up a new phase of that this morning. Wha do you think when you hear "circumference," "diameter," and "radius"

Pupil. A circle.

T. Let us draw a circle upon the board. How do you draw a circle I want a good circle. Gilbert, can you tell us how to make a good circle

Gilbert. Use a string.

T. Sometimes a string stretches. I shall use a wire. What will b the center of the circle when I hold the string like this? [Teacher draw circle on board.] Pretty good circle, isn't it? Now what do we call th part from where I hold my finger to the end of the string?

P. Radius.

T. How can I get the diameter from that?

P. Multiply radius by 2.

T. Is that correct?

P. Yes.

T. Now if I draw a straight line through the center of the circle t the circumference, what shall I have?

P. The diameter.

T. The diameter is twice the radius. Suppose we measure the radiu [Measures radius.] It is 7 inches. If I have the radius given, how do find the diameter?

P. Multiply the radius by 2.

T. How much then should the diameter be?

P. Fourteen inches.

T. Now by using the diameter, how can we find the circumference the circle?

P. Multiply the diameter by $3\frac{1}{7}$ and get the circumference.

T. [Teacher places string round small wooden cylinder.] Let us asure the diameter. [Finds diameter to be 2 inches.] Now let us asure round the cylinder. [Teacher measures the distance round the inder.] It is $6\frac{2}{7}$ inches. Now if the circumference is $6\frac{2}{7}$ inches, how ny times is it greater than the diameter?

P. About $3\frac{1}{7}$.

T. How do we know? Who figured out that $3\frac{1}{7}$ times the diameter als the circumference?

P. In geometry they tell us that.

T. Do you suppose they are more accurate in geometry than we are?

P. Yes.

T. I have another cylinder. Let us measure it. [Measures diameter cylinder.] The diameter is $1\frac{1}{2}$ inches. Let us multiply that by $3\frac{1}{7}$. nswer: $\frac{66}{14}$ inches, or $4\frac{5}{7}$ inches.] What is $3\frac{1}{7}$?

P. The ratio.

T. How can we prove that $4\frac{5}{7}$ inches is the distance round the inder?

P. Measure it.

T. All right. Now, Paul, it is up to you to measure.

Paul. Four and five-sevenths inches.

T. Is $\frac{5}{7}$ more than a half?

P. A little more.

T. Now $4\frac{5}{7}$ is the what?

P. The ratio.

T. Let us express the ratio. [Teacher places upon board at the dic-ion of the pupils, $1\frac{1}{2} : 4\frac{5}{7}$ equals $3\frac{1}{7}$.] Now suppose I give you a prob-m. Lay your books aside. Take your papers. I know of a circle which a diameter of $5\frac{1}{2}$ inches. I want to know what the circumference of t circle is. [Hands begin to rise rapidly.] Morris is the first to have answer. What is your answer, Morris?

Morris. Seventeen and two-sevenths inches.

T. Tell me how you got it.

Morris. I multiplied $5\frac{1}{2}$ inches by $3\frac{1}{7}$.

T. What was your diameter?

Morris. Five and one-half inches.

T. What is the ratio between $5\frac{1}{2}$ and $17\frac{2}{7}$?

P. Three and one-seventh.

T. Isn't that difficult? Now let me give you another. The diameter a circle is 68.2 inches. I want to know what the circumference is.

Ida has it. [Nods recognition to those who got it.] You are lost in y fractions. Charles, what have you?

Charles. Two hundred and fourteen and twelve thirty-fifths.

T. How many have that? How many changed the decimal fract to a common fraction? [Many hands.] Now it does not matter to Try to work out the easiest way. Now suppose this time I give you circumference, to find the diameter. If you start from here to go town and go north three blocks and then turn to your right you m return by coming back the way you went. We have had the diame given, to find the circumference. Now I give you the circumference, find the diameter. Has your process changed any? I gave you diameter, to find the circumference; and now I am giving you the cumference, to find the diameter. Has your process changed any?

P. Yes, we divide now.

T. The circumference is 198 inches. I want you to find the diamet Some of you are making it very hard when you could have simplif your work.

P. We could cancel and make it easier.

T. Yes. Now suppose I had told you 63 inches is the diameter. H would you find the circumference?

P. Three and one-seventh times 63 inches.

T. Now let us try another. I have a circle whose radius is 6 inch I want to know the diameter. How do we find the diameter when have the radius given, Mildred?

Mildred. Multiply the radius by $3\frac{1}{7}$.

T. What are we hunting?

P. For the diameter.

T. Come to the board, Mildred. Show me the radius. Now show the diameter. What is the relation between radius and diameter?

P. The diameter is twice the radius.

T. Now how do we get the diameter when we have the radius?

Mildred. Multiply by 2.

T. They can't hear you.

Mildred. Multiply by 2.

T. Are you sure? Why are you?

Mildred. The radius is half the diameter.

T. Isn't that hard?

P. You have upon the board, $1\frac{1}{2} : 4\frac{5}{7}$ equals ratio $3\frac{1}{7}$. That would be true, for $4\frac{5}{7} : 1\frac{1}{2}$ equals a ratio of $3\frac{1}{7}$.

T. That is right. We made a mistake when we put it upon the board other way. Another one: radius, 3 inches; I want to know the cumference.

P. Seventeen and three-sevenths inches.

T. How many have $17\frac{3}{7}$ inches?

P. I have $18\frac{6}{7}$. [Pupils all agree.]

T. How did you get it?

P. I multiplied 3 inches by 2 to get the diameter. I then multiplied diameter by $3\frac{1}{7}$.

T. I thought I would fool you by giving you the radius. I didn't fool a bit, did I? Another: The diameter is $4\frac{1}{2}$ inches. What is the circumference? What is your result, Arthur?

Arthur. Fourteen inches.

T. What is your answer, Merle?

Merle. Fourteen and one-seventh inches.

T. That is good. Now let us make some rules. How do you find the cumference when the diameter is given?

P. Multiply the diameter by $3\frac{1}{7}$.

T. How do you find the diameter when the circumference is given?

P. You divide the circumference by $3\frac{1}{7}$.

T. How do you find the radius when the diameter is given, Grace?

Grace. Divide the diameter by 2.

T. How do I find the radius when the circumference is given, Morris?

Morris. Divide the circumference by $3\frac{1}{7}$. That is the diameter. Then ide the diameter by 2.

T. How do I find the diameter when the radius is given, Bonnie?

Bonnie. Multiply the radius by $3\frac{1}{7}$.

James. Multiply the radius by 2.

T. How do I find the circumference when the radius is given, lliam?

William. Multiply the radius by 2. That gives the diameter. Then ltiply the diameter by $3\frac{1}{7}$.

T. Now do you know your rules? You worked them out yourselves, n't you? Now I want you to turn to page 284. Glance through the oblems and see if you know what to do with them. Some of you are iling. Why?

P. They are so easy.

T. Tomorrow I want you to solve the first twelve problems on ge 284.

The following is a report of an observation accompanying t
foregoing stenographic report:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Seventh-Grade Arithmetic

1. The immediate aims of the lesson were:

a. To give the pupils such concrete experiences as will enal
them to develop rules for computing measurements dealing w
the circle.

b. To give practice in computing measurements dealing w
the circle.

2. The following material devices were used:

a. Wire string.

b. Several wooden cylinders.

c. Paper and pencils.

d. Textbook, in which problems were assigned for the followi
day.

The teacher measured the geometric forms while the pup
observed her. She also drew the circles on the board. It mig
have been better to have each child in the room supplied with t
wooden forms and to let the pupils do their own measuring. Th
however, would have required considerable equipment and so
disturbance in the distribution. Miss XXX had the materials
hand, and no time was lost in their use.

After she had illustrated such relations as that of the circu
ference to the diameter she called upon the pupils to work seve
problems in which the circumference was given, to find the diam
ter, and several in which the diameter was given, to find t
circumference.

After the rules governing the measurements dealing with circ
were fully comprehended, the teacher asked the pupils to open th
books and check the first twelve problems for tomorrow's assig
ment. All in all, I should say the physical devices were w
selected and used. I think it would have been advisable to ha

h pupil, as home work, verify the relations existing between lius, diameter, and circumference. Each pupil might have been t to his own initiative here in selecting the materials on which make the measurements.

Evaluation of special physical devices and technique of using m. Along with the general physical devices will go a number special physical devices having special application to the bject at hand. We have already listed a few of these. It is ry important that each specialist become acquainted with all known devices in his field and develop skill in the use of se which from reading or observation he expects to find uable. It will be our purpose here to note a few of the most neral, to examine their fitness for the tasks they are supposed accomplish, and to describe the use of them.

Notebooks. The question might be raised, whether notebooks uld not have been listed and discussed under general rather n special physical devices. Perhaps present usage of them uld seem to justify the former caption; but it is probable that use of notebooks is much overdone and that in many classes, h as history and mathematics, the time can more profitably spent in utilizing other channels of expression.

We can lay down here only a few guiding principles. It would necessary to treat each subject separately in order to discuss question fully. Notebooks if rightly used have their great- value in arousing the pupils to activity. They offer some- ng tangible in which the pupils can take pride, for they can the results of their efforts. The value of notebooks is per- ps greatest in the sciences, where factual knowledge plays a mparatively large rôle. The student who has examined cell ers under a microscope and carefully reproduced the cell ms and also labeled their functions is in a much better posi- n to understand the principles of grafting, other things being ual, than one whose personal activity in the study has been nfined to the microscopic examination of the cell layers.

Notebooks are subject to the common danger of devices general: that which is only a device comes to be considered end in itself. Hence notebooks must be made for the direct ed cational value that lies in preparing them and for the use whi they are to be to the student in later reviews. This means th to be of value they must be neatly written and arranged in orderly manner. With respect to uniformity, the paper a covers of the notebooks of any given class should be unifor but any attempt to enforce uniformity rigidly, beyond limiti the content, will tend to kill initiative and thus impair one the main outcomes which they were intended to produce. be of use, notebooks must be looked over frequently by t teacher and graded carefully. To do otherwise will encoura the tendency to neglect them.

As far as possible the outlines, drawings, etc. should be t result of the pupil's experience either in the classroom or in t laboratory. To copy pictures and outlines from books has ve little educational value. Systematic records and outlines reading done in literature may have some value in stimulati the pupil to increase the amount of his reading but may eas become tedious and defeat the very aim of the study of literatu itself. So with all other studies: the amount of notebook wo required and the type of work done must be considered carefu with respect to its contribution to the ends of education.

Use of maps. The value of maps as a special teaching devi is confined very largely to geography, history, literature, a civics, and perhaps decreases in the order named. One of t big outcomes of the study of geography is the ability to gi location to events as they come to mind. The soldier destin for service overseas, who, after riding a day on the first lap the journey to a port of embarkation, wanted to know how f they were from the German lines, represents the state of mi of those who have not been trained with respect to locatio Imagine the utter chaos that must reign in the mind of the

vidual who reads a daily paper, gathering news of events from parts of the world, with no location schemes in which to them.

One of the first considerations in the use of maps as a means developing a location scheme is to present them so that the nsfer is made from the map forms and directions to those ich they represent on the earth's surface. To do this the cher must constantly refer map directions to the real ones ich they represent by asking the pupils to point in the direc- n of England, Brazil, etc. Maps also give no idea of absolute e or distance. To get this the pupils must compare the long tances or large areas on the map with short or small ones on e map and also with those with which they have experiences real life.

Since parallels and meridians are given as curved lines, the tter of the location of one point with respect to another is ten confusing. It is well to place beside such a map one in ich the parallels and meridians are shown as straight lines. e greatest danger in using the straight-line parallels and ridians is that they distort the apparent size of the areas in e far north and south. This error should be corrected by lling the pupils' attention to the fact and cause of the dis- rtion, at the same time showing them the distance or area on curved-line map. Since distance and area are relative con- derations, it is desirable to devise other means of showing mparison than the maps as now given. To draw Russia and lgium to scale, and then color Belgium and paste it at the ntral point of the map representing Russia, is a very effec- ve means of showing the relative sizes of the two countries. ables showing areas in terms of the same unit are often help- l, especially as maps in the same book are often drawn on fferent scales.

Detailed maps should be supplemented by outline maps on ich the positions are located as the lesson proceeds. The

special value in using this type of map is that it is free fr the maze of cities, villages, rivers, mountains, etc. and allows positions which have reference to the discussion to stand o Then, too, the very act of marking and naming the locati serves to fix it in mind. Outline maps of this kind, on wh chalk and eraser can be used as on a blackboard, may obtained for class exercises. For the needs of the study peri outline maps which fit into the students' notebooks have spec value. It is very desirable to have pupils place free-hand o lines on the board. In the geography class itself much of t work should be done. The pupils should be able to ske roughly, in less than one minute, the outline of any continent

One of the values that come from the making of maps by t pupil is that this training prepares him later to read maps m effectively. Many teachers assume this ability when very lit of it is present. If the pupil is able to read maps in the se that he can interpret the conventional features of them, he m not at the same time associate these forms with the realit which they are supposed to represent. This ability can be veloped by making maps of local regions or by studying lo maps and noting the actual topography, cities, lakes, rivers, e

The use of relief maps aids somewhat in suggesting t reality behind the physical features represented by maps. T relief map brings the pupils one step nearer the real situati However, as it is more expensive and somewhat unwieldy, t relief map should not take the place of flat maps. It is desira that there be a set of relief maps for the building, so that acc may be had to them from time to time. However, they sho not be purchased until the rooms are thoroughly supplied w flat maps.

Use of charts and models. There are many advantages to gained through the use of charts and models. In them t pupils can see the relationship of parts, especially in studyi the biological sciences, to learn which by the study of str

ural and functional relations directly would require much more me, greater effort, and a technique far beyond the general stu- ent. A model of the brain, for example, if properly studied, gives very good idea of the actual brain. Pupils can take it apart nd see clearly the main features with none of the unpleasant- ess of cutting into a brain. Not only this, but unless dissecting done by an expert, the parts are likely to be so mutilated that clear idea of the structure is impossible. One of the dangers n the use of charts and models is that the size of the whole or f a part will be distorted. This difficulty can be met by the eacher's calling attention to distortions of this kind. The tory is told of a student who received the impression that he brain was hollow, because the model that he studied showed s surface only. Hence it is important that the teacher in using harts and models should not take it for granted that the pupils ill gather by themselves the correct idea of the real thing. Rather he should use the chart or model simply as one of vari- us devices valuable in giving the pupils the concept desired.

Use of pointers. Rubber-tipped pointers should be provided n each room for use in calling the attention of the class to haps, charts, models, blackboard work, etc. The advantages of his device are many. In the first place, putting the finger upon haps, charts, and models soils them, in time making them al- most unreadable. Then, too, maps and charts are often hung oo high on the wall to be reached by the small pupils and some- imes even by the teacher. The use of the pointer also enables he person pointing to stand at one side of the material while xplaining it. The writer has seen cases where high-school upils who were explaining algebra work at the board found it ecessary to stand directly in front of the work in order to point ut the individual terms. Of course, a yardstick may be used, ut the pointing end is blunt and the stick itself is wide and flat, o that in use with charts and maps it frequently covers part of he material to be shown.

Special physical devices used in mathematics. Straightedge compasses, and graph paper round out the special physical d vices most needed for teaching higher mathematics. It is ver desirable that good drawings accompany the statement of th problem to be solved. The imperfectly drawn figure does muc to confuse the student in his thinking. Whereas with a goo drawing he might solve the proposition, he fails with a les accurate figure. The concrete background furnished by draw ings seems necessary to the effective thinking of certain visuall minded pupils. It seems to furnish the outline into which idea are to fit, the clearness of the outline being a function of th clearness of the thinking. A story is told of a teacher who, be lieving that the purpose of geometry was to develop the powe to think entirely in the abstract, used no drawings at all bu required the pupils to prove propositions from verbal descrip tions of them. This was only carrying to its logical conclusio the idea that the quality of the drawings used in solving mathe matical problems is of little consequence.

More graphing should be done in our classrooms than is don now, with a view to making the pupils proficient in readin graphs. One may say that the graphing of equations in algebr is a roundabout method of attaining this aim; yet there is littl doubt that this training is very valuable as a basis for under standing the significance of the graph when it is met later i economics or a trade journal. That is, fully to comprehend th material when put out in graph form, one must have a genera notion of the meaning of an origin and an x and y axis. It i a mistake to assume, however, that because a student can us the graph in a mathematics classroom he will be able effectivel and without further teaching to read graphs as applied i statistics. The extent to which graphs are used nowadays i everyday life makes this matter a very important one.

Since the graph is valuable only if accurate, it should b made upon paper specially prepared. To facilitate matters, th

eacher should have a supply of graph paper on hand to pass ut to students who are not supplied. The teacher should bserve the conditions of the straightedges and also note whether or not the pencils are long and well-sharpened. The encil used in drawing graphs should be at least of medium ardness and long enough to project above the hand while in se. Although the equipment used in pure geometry is usually imited to straightedge and compass, protractors might well be dded to the list, for use in preparing drawings to represent ituations given in algebra and physics problems. The drawng and graph paper used in courses in which notebooks are ept should be of such size that it can be readily transferred o the notebook.

GUIDE TO OBSERVATION AND REPORT

1. List the immediate aims.

2. Note whether or not the special physical devices are well elected with respect to the immediate aims.

3. Note whether or not the special physical devices are skillfully nd effectively used.
   a. Are they well adapted to the task at hand?
   b. Are they sufficient?
   c. If not sufficient, list those you would add.

4. Discuss the use of special devices.

SELECTED READINGS

OHNSON, HENRY. The Teaching of History, chap. ix, pp. 225–240, "Use of Models and Pictures"; chap. x, pp. 241–268, "The Use of Maps." The Macmillan Company, 1916.

LOYD, F. E., and BIGELOW, M. A. The Teaching of Biology, chap. ix, pp. 209–228, "The Laboratory, its Equipment, Materials for Study and for Demonstration." Longmans, Green & Co., 1907.

MITH, A., and HALL, E. H. The Teaching of Chemistry and Physics, pp. 123–125. Longmans, Green & Co., 1908. Deals with the notebook in the physical-science laboratory.

The following is a sample report of an observation accompanying Lesson XXII. A stenographic report of the lesson from which this observation is written is included (see page 212)

OBSERVER: XXX

SCHOOL: XXX

CLASS: Seventh-Grade Arithmetic

1. The following seem to have been the immediate aims of the lesson:

a. To develop rules for computing measurements dealing with circles.

b. To give pupils practice in computing measurements dealing with circles.

2. The following special physical devices were used:

a. Wooden cylinders.

b. Wire string.

c. Paper and pencil.

d. Ruler.

I should say that the special physical devices were well selected with respect to the immediate aims. The teacher made the measurements while the pupils observed, with the exception of one instance in which the pupil did not seem to understand. He was given a cylinder and asked to come to the front of the room and compare the measurements of the diameter and the circumference which he did. The measurements made by the pupil were observed with keen interest on the part of the rest of the class. After the relative ratio between diameter and circumference had been discovered, the teacher gave the ratio $3\frac{1}{7}$ as approximately accurate. The remainder of the time was taken in solving problems given by the teacher.

LESSON XXIII

im. To study and observe the teaching of the drill exercise with a view to discovering good drill procedure.

Previous to observation the student should read the discussion n the drill exercise found in Lesson XXXIV, pp. 314–321.

GUIDE TO OBSERVATION AND REPORT

1. Is the drill exercise carried out in a lively manner or does drag?

2. Are stimulus-response situations set rapidly or slowly?

3. Do you consider the length of the drill period too long, too ort, or about right?

4. Are drill periods most effectively spaced?

5. Does the teacher encourage speed of response?

6. Does the teacher call the name of the pupil before or after ving the stimulus?

7. Are the drill elements so disassociated from the content that ey can be utilized effectively in other situations? For example, ppose the stimuli are the multiplication tables. Is the stimulus, y 9 times 8, conditioned in response upon its place in the table nines or are the pupils taught to respond to it independently of s setting; that is, is it being so taught that many will find it ecessary to say the nines preceding 9 times 8 before giving the rrect response to this stimulus?

8. If the rote memorizing of prose or poetry is being observed, oes the teacher take advantage of experimental evidence as to hole versus part learning and spaced versus nonspaced learning?

9. Does the teacher aid pupils in effectively forming associ- ions?

10. Is the drill effectively motivated; that is, do the pupils see e purpose of the drill and take a personal interest in it?

11. Have the patterns been correctly laid before drill?

12. Are the pupils exercising any wrong patterns during th drill exercise?

13. Is the drill exercise justified from an educational point view?

The following is a sample report of an observation accon panying Lesson XXIII:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Fifth-Grade Arithmetic

The drill lesson which I observed today was well taught. Th content consisted of the multiplication tables, including th "sevens," "eights," and "nines." The teacher gave the stimul to the class as a whole and immediately afterwards called upon member of the class to respond. Failure on the part of this pup to respond at once was followed by the raising of the hands those who thought they knew the answer. The teacher did n wait for the lagging pupil or for one who gave the wrong respon but quickly called upon another. I believe this was good practic for it did not allow the pupil time to obtain the answer by a roun about way. The immediate association of the correct response wit the given multiplication stimulus was the desired outcome, and believe the teacher's method was well suited to obtaining it.

The exercise lasted about ten minutes. I asked the teacher aft the class as to the proper length of the drill period in such a exercise. She replied, "While I usually allow about ten minut for a drill exercise in arithmetic, one cannot set any given leng of time as desirable. The teacher should watch the class for sig of loss of interest and stop at that point."

The exercise was carried out in a lively manner. It seemed me that everybody was thinking all the time. The teacher so sca tered the questions that no pupil could form any idea as to ju when he was to be called upon.

LESSON XXIV

im. *To observe the teaching of an appreciation lesson with a view to discovering good procedure.*

As a preparation for this observation the student should read esson XXXVI, pp. 331–347.

GUIDE TO OBSERVATION AND REPORT

1. Does the teacher appear to appreciate that which he would ave the pupils appreciate?

2. Is the teacher enthusiastic?

3. Does the class as a whole seem to enjoy the lesson?

4. Does the teacher require the analysis of technique and form such an extent as to lessen the pupils' appreciation?

5. Does the teacher distinguish properly between knowledge meaning and knowledge of technique in their effects upon ppreciation?

6. Does the teacher distinguish properly between intellectual nd emotional appreciation?

7. Does the teacher make sure that first impressions are easing?

8. Are the pupils given plenty of opportunity to indulge in their joyment?

9. Is the appreciation lesson appropriate to the age of the pils?

10. Are the general aims of an appreciation lesson attained?

11. Is the lesson justified as an educational outcome?

The following is a sample report of an observation accom
panying Lesson XXIV:

OBSERVER: XXX

SCHOOL: XXX

CLASS: History 9B

The aim of the lesson which I observed today was to develop a
appreciation of Greek architecture. I did not consider the lesso
entirely successful, although for the most part the pupils seeme
to enjoy it. The teacher lacked enthusiasm. She knew the fac
about Greek architecture, but it was evident from her voice an
bearing that she was not very enthusiastic about teaching ther
In my search for reasons for this impression on my part I conclude
that it could be traced to the fact that the teacher hardly change
her position during the lesson. Her facial expression changed b
little, and her voice was scarcely inflected. Two reports were give
by the pupils, and they did much to add to the interest of th
group. Aside from the fact that the teacher seemed to lack th
necessary enthusiasm, the lesson was in all respects effectivel
conducted. Attention was called to Greek forms of architectu
in the neighboring community. This brought forth fresh intere
in the subject. I believe the lesson would have been improved ha
the teacher used pictures more freely to bring out the contrasts
the different forms of architecture.

The aim of the lesson was justified as an educational outcom
for an interest in architectural design will do much to add pleasu
to living.

LESSON XXV

m. To observe the developmental method with a view to understanding better its use in the teaching process.

Previous to observation the student should read as preparation the discussion on the developmental method found in Lesson XXXV, pp. 322–330.

GUIDE TO OBSERVATION AND REPORT

1. Is the lesson largely conversational or is it in the form of a ture?

2. If the lesson is largely conversational in type, do you think would be improved by greater use of the lecture method?

3. If the lesson is largely lecture in type, do you think it would improved by greater use of the deductive method?

4. Is the lesson largely inductive or deductive?

5. If the lesson is largely inductive in type, do you think it uld be improved by greater use of the deductive method?

6. If the inductive method of attack is used, is the new idea operly tested in the light of the pupils' experience? Is the neralization, or new idea, a discovery on the part of the class a revelation on the part of the teacher?

7. If the lesson is largely deductive in type, do you think it uld be improved by greater use of the inductive method?

8. Is there evidence that the teacher has clearly thought through e teaching process before meeting the class?

9. Do the pupils seem to have a satisfactory background of perience with which to appreciate the new idea?

10. Does the teacher effectively marshal the pupils' world of ear ideas in preparation to the introduction of the new idea?

11. Do the pupils take an active or a passive attitude toward t problem?

12. If the pupils take a passive attitude toward the problem, c you locate the difficulty?

The following is a sample report of an observation accor panying Lesson XXV:

OBSERVER: XXX

SCHOOL: XXX

CLASS: Seventh-Grade Arithmetic

It was the teacher's aim in the lesson which I observed tod to develop rules for finding the circumference of a circle when t radius or diameter is given and for finding the radius or diamet when the circumference is given. The lesson was of the convers tional-development type. Miss XXX was very skillful in so utili ing the pupils' experience that it was employed to best advanta in obtaining the new idea. She did not lecture to them, but i stead asked them questions. The pupils themselves did the di covering. The new idea was then a discovery on the part of t class rather than a revelation on the part of the teacher. As soo as a rule was established it was tested, and then used to wo several problems. This served to fix it in mind.

There was every evidence that the teacher had carefully thoug through the lesson before meeting the class. Her materials we in readiness. Every move or verbal expression counted. The rul were effectively developed, and every pupil in the room gave ev dence of ability to apply them.

PART III

INTRODUCTION

In the study of Part III the student will learn something of e nature and purpose of practice teaching with a view to veloping the proper attitude toward the work. Many student achers fail at first because they do not appreciate the serious ture of the task. They do not accept full responsibility from e start, but instead, as in college classes, take matters lightly, sting to the teacher in charge to see that everything ends ll. This attitude is fatal to the student teacher. He is not w dealing with inert material as in other laboratories, but stead with boys and girls who will test his power from the ginning. The problem is his; and although a supervisor may ake suggestions or, if necessary, take over the class, there is thing a supervisor can do while the student teacher is actually charge. Hence he must come fully prepared, ready for any ergency. There is no dry-land swimming in practice teaching. Several lesson plans are included in Part III. They are of rious types and deal with different subjects. The student acher must select the type which seems best suited to the sk, and begin to prepare a plan for the first lesson at least one ek before he begins teaching. While he is preparing the les- n plans he should be studying carefully Lessons XXIX to XXII inclusive. Frequent conferences with the supervisor at is point may save costly mistakes. Lessons XXVI to XXVIII clusive should also be read in the interim between observation d actual teaching. These lessons will serve to give a philo- phical background for that which follows.

LESSON XXVI

Aim. To obtain the proper attitude with respect to pract
teaching.

Amount of practice teaching necessarily indeterminate. many states a minimum number of lessons is required by l for the issuance of a license, but nowhere should practice tea ing cease until the student fully demonstrates that he can tea This ability should be the final test for the issuance of a licen It is not uncommon for the supervisor to find a student w looks upon the hours of teaching and observation as some f mal requirement that must be met as part of the prescrib course. Such a student has a wholly wrong attitude and likely to meet with serious difficulties in acquiring the techniq of teaching. Only a total lack of moral sense can account fo student teacher's appearing before a class of pupils with t timeserving attitude. Such an attitude in the student's acade classes means loss largely to the student, but in the pract school it entails loss for pupils who by age and position are u able to defend themselves. Each minute lost in a classroom thirty pupils means a half-hour of lost time. The stud teacher who is inclined to take practice teaching lightly sho consider this. Nothing less than his greatest effort can be ceptable to those in charge of the training school, who have their first consideration the well-being of the pupils.

Proper attitude of student teacher one of eagerness to ta full advantage of his opportunity. The student teacher sho not look upon practice teaching as a burden or a requirem but rather as a privilege. Once out in the profession the opp tunities for receiving constructive help are, in most systems,

o few. The teacher must struggle on with only his experience a student instructor to serve as a guide and a basis for self-provement. As a student teacher he is with those who are xious to see him improve. His improvement is a coöperative dertaking upon which both his success and that of the super-sor depend. Here is an opportunity for coöperation in a task hich cannot be but interesting and profitable for both if the oper attitude can be maintained by the practice teacher.

Improvement in teaching has no limit. One of the most in-esting features of the teacher's work is that there is no limit the improvement which it is possible to make. So complex the process of classroom teaching that perfection may be more arly attained in almost any other field. This fact adds zest the work of one whose training has developed ideals of teach-g and criteria for recognizing one's own improvement. Hence e teacher does not leave the training school a finished prod-t but, like the newly graduated surgeon, must expect to im-ove with experience. He can *teach*, however, and in this spect he is far above the position of the untrained beginner. his attitude has been right he has also developed ideals that ll carry him far on the road to perfection and offer him a ver-ending source of pleasure.

Most students can become good teachers. The old saying at teachers are born and not made has just enough truth in to make it dangerous. It would be just as true to say that athematicians are born and not made. Certain innate abilities, course, must be present in either case; but, granting these, aining as a second factor must be combined with the former produce the finished product. The good teacher is not the e who is born with a teaching instinct. More likely he has en the product of years of effort. As there is no royal road to knowledge of geometry, so there is no royal road to the ability teach. The student must be content with the fact that there a road and have the patience and faith to follow it.

Formal period of teacher training necessary to meet requi ments of modern schools. As civilization becomes more a more complex, the task of utilizing the vast social inherita in the process of preparing individuals to meet the needs modern life becomes greater and greater. This fact alone wo indicate an increasing need of more thorough preparation the part of those who are to enter the profession of teachi Add to this, however, the fact that the home is taking less a less part in the process of fitting the child for life, and it c readily be seen that the training required of one preparing teach must expand considerably. Not only is it now necessa that the teacher know the subject matter; it is also necessa that he have a philosophy of education, a knowledge of the la governing mental development, and a developed technique the process of teaching. That this training is producing teach who can teach more effectively than the untrained teacher the past there is good evidence. In a study conducted Superintendent Spaulding at Newton, Massachusetts, a f years ago, he repeated an examination in a few fundamen subjects given to children of the same grade about forty yea previously. The tests revealed that although children tod study a much richer curriculum they do better in the fund mentals than did the pupils of the earlier day. Of course, o may say that part of this improvement in classroom instructi is owing to better texts, better-equipped classrooms, and long terms of school; but it is very probable that much of it is owi to improved teaching methods. The best teachers today a highly skilled, and even the average teacher is able to tea much more effectively than did the teachers in the past.

Development of technique important factor in preparati to teach. There is a saying to the effect that we learn to by doing, which has a deal of meaning for those who are abo to end the period of their general training by teaching und highly supervised conditions. All the previously studied theo

nounts to nothing if it does not culminate in effective tech-
que in the classroom; and this culmination is brought about
ly through the process of actual teaching. With all our theory,
e importance of which we would in no wise minimize here,
e learns to teach by teaching. In saying that one learns to
ach by teaching, however, we do not mean to give the idea
at all teaching leads to improvement. The extent to which
udent teaching may lead to improvement will depend upon
e theoretical background with which one goes into the class-
om, the desire to improve, and the method of attacking the
oblem of teaching. For various reasons, years of experience
not always improve the teaching process. The most com-
on reason for this is that the teacher has no standard for
dging his own teaching. He is not always aware of his own
ortcomings, and, even if he were, he would have no idea of
w to go about the task of improving himself. During the
riod of student teaching the prospective teacher further de-
lops his ideals of classroom instruction, learns to evaluate his
ocedure, and reduces his technique to the level of habit.

Great care needed in reducing technique to habit, making re of desirable forms of procedure. As the beginning student the violin may acquire improper ways of holding the instru-
ent or the bow, so the beginning teacher may develop bad
rms of questioning, disciplining, etc. Hence it is important
at the teacher use the proper procedure from the very start.
hough his procedure be stiff and formal at first, the form must correct. To this end he must make detailed lesson plans, have
em approved by the supervisor, and follow them carefully.

Meaning of formalism in beginning stages of student teach-
g. As we noted above, the early stage of student teaching
ust of necessity be dominated by a well-formulated proce-
re. At this point the student's attention must be concentrated
rgely upon technique. He must study the fitness and order his questions, the manner and rate of asking them, and their

effectiveness as judged by the response of the pupils. He becoming acquainted with the tools and their use. Hence mu of his attention must now be directed upon himself. His po tion in the early stage of student teaching is much like that the baseball player who is being trained to bat. The player told what should be his approximate distance from the pla what angle each foot should take with respect to the side of t plate, what should be the position of his body at various stag in the process of hitting, how he should grasp the bat, etc. It easy to see how much of his attention at this stage of his trai ing is directed away from the actual hitting of the ball and up the manner of hitting it. In time, however, this manner b comes habitual. Grace of movement follows, and more a more of his attention can be directed upon hitting the ball.

So with the student teacher. He must go through the stage formalism in his training if he is ultimately to attain comple mastery of the art. Technique must in time be reduced to hab so that the teacher can give little thought to the art of questio ing and attend to the pupils themselves. Not until this sta has been reached is the student a real teacher. Professor H. Nutt writes as follows on the meaning of the formal period:

> A final most vital point that should be noted is that it is not the f that one is studying his teaching performance in a training school un the direction of an expert supervisor, or the fact that he is studying teaching performance in a public school without the help of any o that makes his training formal or otherwise, but it is the fact that turns his whole attention to the study of the tools of teaching and mak for the time being, their essential characteristics his whole concern. T taking time off from the job of teaching, in either case, in order to mas the tools with which to do the job most efficiently is formal study a formal training. In each case the teacher studies the tools for their o sakes, and tries them out until he discovers how they work and why th work, then practice soon puts them in the realm of habit and the teac is freed from the formalism of his training.[1]

[1] H. W. Nutt, The Supervision of Instruction, p. 14. Riverside Textbo in Education Series. Reprinted by permission of Houghton Mifflin Compa

Analogy between training of teacher and baseball player nperfect. Like most analogies the one given above is good at nly a few points. The main discrepancy in this case comes om the fact that the baseball player is trained to bat pre- ously to the opening of the ball-playing season, whereas the acher must get his training during the heat of real action. He ust teach while learning to teach. Hence he must expect close nd exacting supervision. He must be willing to conform to the ggestions of those responsible for the welfare of the pupils. Ie must take care that his plans are submitted and approved time to permit changes, if necessary. Above all, he should e determined to learn as rapidly as possible, so that the loss ncurred by the pupils may be reduced to a minimum.

Carefully prepared plans make good teaching possible from he beginning. The welfare of the pupils demands that the tudent teachers begin teaching with plans that have been orked out in full detail. This method will make it possible or the average student teacher to teach successfully from the eginning. This is necessary, for even in a private training chool our first duty is toward the pupils. No sacrifice on their art should ever be expected. The beginning teacher must, as ar as possible, make up for his lack of experience by preparing etailed plans and following carefully the suggestions of his upervisor. Each lesson taught, even the first, must be a good esson, for after all the training school is a school, and children n it are being fitted for life's activities.

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Jutt, H. W. The Supervision of Instruction, pp. 7–15. Houghton Mifflin Company, 1920.

LESSON XXVII

Aim. *To develop an appreciative understanding of the natur and purpose of the lesson plan.*

Desirability of preparing lesson plans. There is no questio about the desirability of making plans before attempting t teach a lesson. All projects, whether they be the leading of a army in battle or the building of a house, require that the mai points of procedure be clearly outlined in advance of the actua activity. To do otherwise would be ruinous to the general c the contractor. The building of a house does not proceed fro moment to moment according to the whims of the builder, bu instead the plans are fully laid in advance. The teacher like wise, in preparing to teach a lesson, is getting ready for a pro longed and highly complicated activity. The strategy for successful attack on the lesson may require forethought equa to that of the general. There is almost no limit to the care an shrewdness with which the teacher's plans may be laid. On th other hand, he may make no plans at all, but his chances of rea success under such conditions are no greater than those c the general who should twirl his thumbs up to the moment c battle and then order a charge without knowledge of the su rounding country or the size and condition of the enemy forces. The following quotation from Colvin shows well th purpose of the lesson plan:

> A lesson plan, however, is in a small way similar to a plan of battl The general in command must know his main objectives and his detaile aims; he must further have his method of reaching these objectives ver clearly worked out in advance of the actual engagement. While man things may occur during the fighting to cause him to modify both aim

d methods, the fact that he has planned what to do in advance will lp him to change details intelligently. Further, certain main objec-ves must be realized if he is to win the engagement at all. It is equally ue that while no teacher can foresee all the questions that he should k in advance of the actual lesson, the teacher who goes into the class thout a very definite idea of what his most important questions are to and how they should be framed, is not likely to formulate them well the spur of the moment.[1]

Degree of detail in plans depends upon experience. It is ghly desirable, if not indispensable, that the beginner prepare is plans in the minutest detail; but he soon must learn to bbreviate more and more, until a few sentences jotted down haste serve as a plan from which a masterly lesson may be ught. Time does not permit the classroom teacher to make etailed plans in every subject. His classes are too many, and ther duties crowd in to occupy his time. The abbreviated plan ust serve the purpose of a more detailed one. It must stand r bold type in the foreground which, when in use, fades radually away, leaving the details of procedure to be read, uch as the type thrown upon the screen at the photoplay gives ay to that which seems to emerge from beneath it. Such plans, owever, are not likely to be made by one who has not at some me prepared fully detailed plans. The purpose of having the eginner make detailed plans is twofold: first, in order that he ay teach effectively from the start; secondly, in order that he ay be able ultimately to prepare and use abbreviated plans hich will serve effectively the purpose of detailed ones.

First plans of student teacher should be detailed. As inti-nated in the foregoing paragraph, the student teacher should egin by making detailed plans. Were it advisable from the tandpoint of one interested only in the training of teachers to

[1] Stephen S. Colvin, "The Lesson Plan and its Value to the Student-Teacher," The Eighteenth Yearbook of the National Society for the Study of Edu-ation, p. 206. Public School Publishing Company, Bloomington, Illinois. Re-rinted by permission.

let him discover the need for such plans by floundering aroun at the beginning, consideration of the children would mak such procedure impossible. It is a common objection on th part of beginning teachers that to follow out completely de tailed plans makes the procedure wooden by not allowing fo the situations likely to arise. It makes impossible, they say the free and easy atmosphere that obtains during the teachin by the regular classroom teacher. In this they are right. How ever, correctness of procedure must take precedence over grace fulness of performance if full effectiveness is finally to b obtained. The beginning student of the violin may handle th bow less gracefully while under the tutelage of the master, bu when those activities are relegated to the background of con sciousness the properly trained student of the violin has bot effectiveness and grace. The improperly trained student ca have the latter only. So with the student teacher. His teachin at first will of necessity be somewhat formal and wooden. Hi questions must be carefully prepared in advance, and his plan carried out to the letter. However, as he develops skill an poise in presenting the subject matter he will be able to deviat slightly from the plans and yet attain the objectives of th lesson. Then the plans may become more and more abbreviate until they are reduced to a size suitable to the needs of a regula classroom teacher.

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COLVIN, STEPHEN S. "The Lesson Plan and its Value to the Student-Teacher," in The Eighteenth Yearbook of the National Society for the Study o Education, chap. ii, pp. 190–212. Public School Publishing Company Bloomington, Illinois. The student will find this a very valuable discussion

MCMURRY, C. A., and MCMURRY, F. M. The Method of the Recitation chap. xiv, pp. 329–339. The Macmillan Company, 1903. Deals with th lesson plan.

LESSON XXVIII

im. *To become able to orient a lesson in terms of remote and immediate aims.*

The importance of a remote aim is clear to all who give the uestion thought. The teacher who does not know what he is riving to accomplish day by day may be likened to the lost oodsman who merely walks and walks. If by any chance one our's journey leads in the same direction as that which was ken during the preceding hour, the wanderer still has no as- rance that his direction of travel is not directly opposite to at in which the desired haven lies. On the contrary, the acher who is aware of the educational outcomes or the remote ms for which he is striving may be likened to the woodsman ho is guided in his travel by sun, moon, stars, or compass. ach step brings him nearer his objective. His step is lighter nd quicker because he is spurred on by the thought that he is oing somewhere and that each step brings him nearer his goal.

Knowledge of ultimate goals demands a philosophy of educa- on. If the teacher is to direct the development of those in his harge he must first have answered in his own mind such ques- ons as Why does society set up such an institution as the chool? What is the purpose of education in a democracy? hen is an individual educated? What truly educational ex- eriences are offered by the subjects I intend to teach? To hat extent should allowance be made for individual differ- nces? To be able to answer intelligently such questions as hese gives point to the daily lessons while they are being ught. The teacher who has ultimate goals in mind has criteria r determining what in each lesson should be emphasized and

what slighted or omitted. He is able to select the fundamenta and to apportion wisely the effort of the pupils. To quot Professor Stephen S. Colvin[1]:

> It may be objected that in a practical course philosophical consider tions have no place. And to this I would agree if such questions we merely philosophical—that is, if they issued in no practical co sequences. It is, however, of the utmost importance that the teach should have a broad and generous conception of his calling; that h should comprehend the relation of things; that he should have lar objectives that extend his vision beyond the immediate work that he doing, that give him an insight into its significance, and a means evaluating its details in terms of something more comprehensive an important. This broad point of view is particularly necessary for th prospective high-school teacher, who often is content to teach his su ject merely as a "subject," and whose greatest single fault is the "hea ing of lessons"; who all too frequently does not know where he is goin but simply that he is "on his way." For the elementary teacher, th broader outlook may not be as essential. Instructors in the lower grad are held down to very definite courses of study, to be taught accordi to carefully prescribed methods with definitely stated and measurab results. The high-school teacher, however, has large autonomy in man instances, and unless he has a stock of "free ideas" to aid him, his ai in teaching, as well as his methods, are likely to be largely of the tria and-error variety.

Teacher without ultimate aim becomes interested in subje matter rather than in pupil's development. The teacher wh owing to lack of a philosophy of education, is not strivi toward goals formulated in terms of pupils' development, soo becomes a teacher of subjects rather than a developer of pupil The subjects become ends in themselves, and the pupils a made to conform to them. The needs of pupils vary from ye to year; but the subject is a constant. Lessons are given in un doses of so many pages per day. After a few years' experien

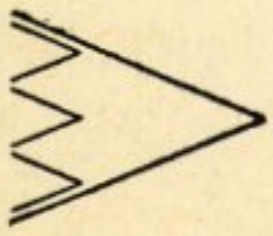
[1] "The Lesson Plan and its Value to the Student-Teacher," in The Eigh eenth Yearbook of the National Society for the Study of Education, p. 1 Public School Publishing Company, Bloomington, Illinois. Reprinted permission.

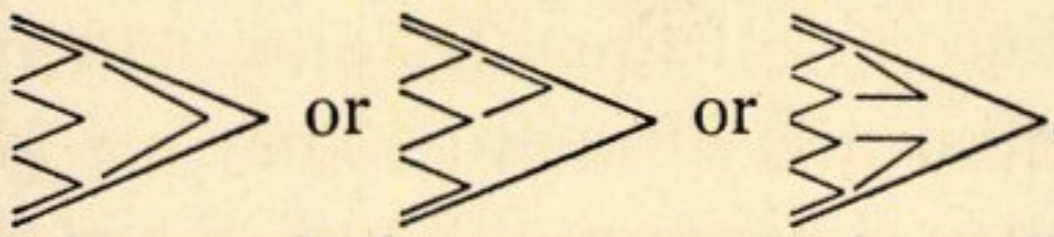
teaching a given subject, such a teacher can tell just what is be covered each day of the semester. All class activity bemes formal and deadening, the individual being lost sight of the routine of the procedure.

Teacher with ultimate aim centers his attention upon pupils. e teacher with an ultimate aim centers his attention upon the pils, the subjects becoming instrumentalities by means of ich he gives the pupils such experiences as will enable them er to function properly as members of society. The emphasis ced upon a given section of a book will depend entirely upon e pupils' needs. Likewise, the rate of progress through the ok, the order in which chapters are assigned, the amount of erence material included, will vary from time to time, dending upon the needs of the class. Such a teacher will not be lave to form; his interest will be centered in function. He is nolder of men and women, not a specialist interested in hisry or mathematics for its own sake. Each class presents a w problem, for pupils differ and the task of adjusting materls to their needs is one which ever calls for psychological sight and the development of new skills. Hence there is little nger of his getting into a rut. Life's work for the teacher der these conditions becomes, as it is to all those who create, never-ending source of interest.

Ultimate outcomes or aims should, for a time, be stated at ginning of each lesson plan. The writer has listed previously e ultimate outcomes which may be expected of each subject. uring the stage of beginning teaching, in which the student preparing detailed plans, it is recommended that those outmes which are applicable and for which the teacher is striving ould be listed under "Remote aims" in the lesson plan. The udent should not only write the intended remote aim but ink about the importance of it and the possibility of attaining This practice will help him to think of teaching in terms of als for the pupils.

Immediate aim and its relation to remote aim. The remo
aim should be followed by a statement of the immediate ai
The immediate aim signifies the goal of the lesson and shou
be clearly in mind during the preparation of the lesson pl
This is necessary if all activities are to focus upon an outcor
The focusing of activities brings unity to the lesson, much
bringing each sentence into relation to the topic sentence resu
in unity in the construction of a paragraph. Each activity
part of a larger activity which itself is focused upon an outcor
In this manner there is developed a hierarchy of outcomes c
minating in one of the three outcomes as formulated by Ingl
or one of the four enumerated by Bonser, namely, civic e
ciency, social efficiency, health, and culture. To illustrate,
us suppose that we are preparing a history lesson dealing w
the organization of the new government after the Americ
Revolution. Our immediate aim in the lesson may be to bri
about an understanding on the part of the class of the relati
between the newly created departments of government and t
needs of the people. The attainment of this understanding w
necessitate the discussion of many subtopics, such as the ba
of state representation, the relation of executive, legislative, a
judicial branches to each other, or the means of appointing
electing to office. The discussion of each topic is a small unit
teacher and pupil activity having an aim of its own leading
the immediate aim of the lesson. We can describe such a less
diagrammatically by letting a V-shaped symbol, as >, represe
such a unitary teacher-pupil activity as the need of investi
the three functions of government in three distinct offic
bodies. The number of these unitary activities and their re
tion to each other will depend upon the lesson that is bei
taught. If all are about equal in importance and coördinate
their relations, we may represent the lesson by such a symb

as  , in which the outer V represents the fact that t

ree inner V's lead to or culminate in the lesson outcome. In se these unitary activities are not all coördinate, but instead e attack upon one necessitates the mastery of one or more of e others, we may represent the situation by such a symbol  Hence we see the lesson as unitary whole composed of smaller units properly related and cused. In the same way we may think of a course in history any other subject as a group of lesson units properly related d focused. We may represent a course of twelve lessons agrammatically as follows:

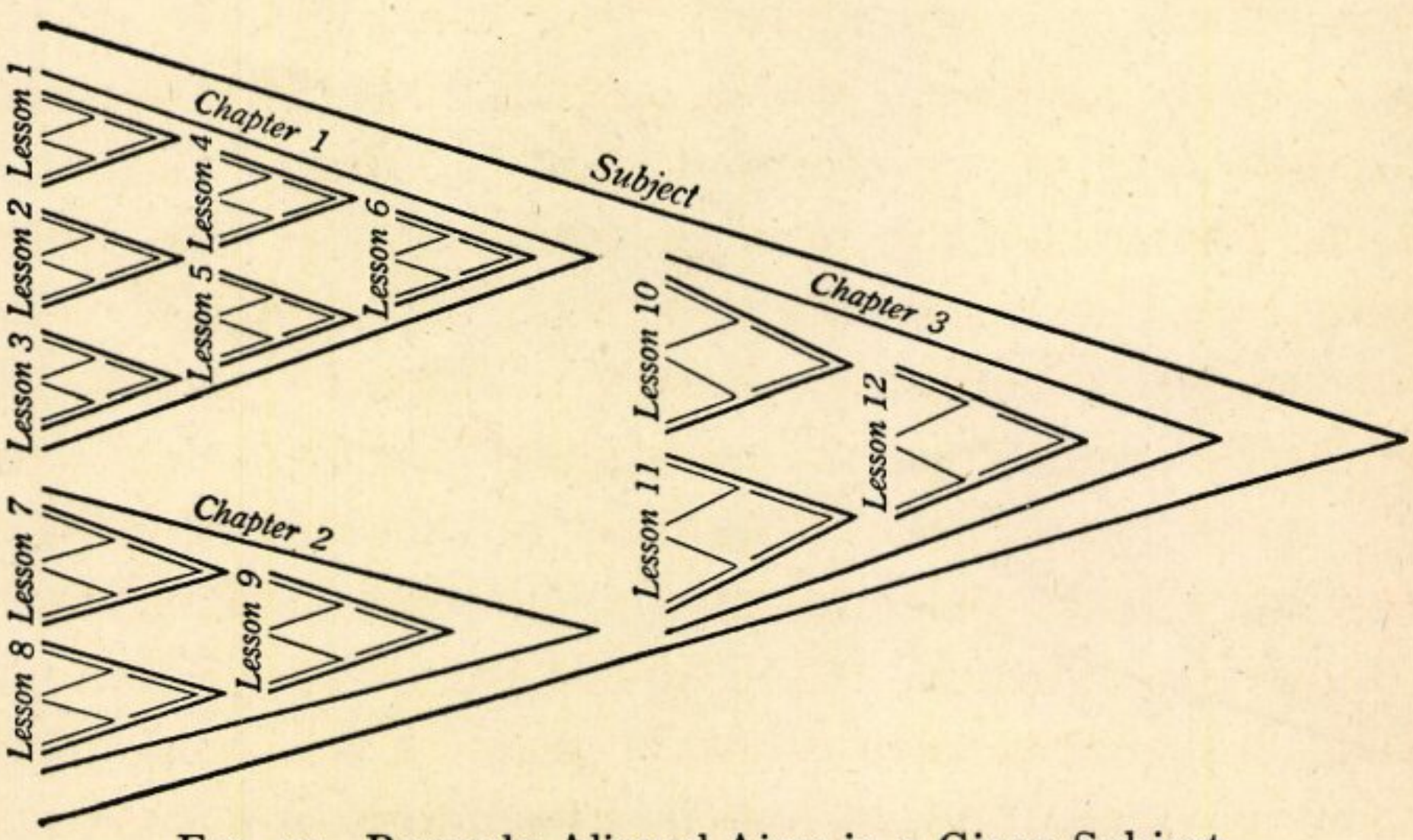


FIG. 32. Properly Aligned Aims in a Given Subject

essons 1, 2, 3, 4, 5, and 6 and Lessons 7, 8, and 9 work toward ims of higher rank than those of the daily lesson, yet are ubsidiary to the ultimate goal of the course. Lessons 10, 11, nd 12 bring the two former groups of lessons to bear more irectly upon the ultimate outcome of the course. In the same anner several courses may lead to one of the more remote oals of education, say civic and social efficiency. This goal, owever, is subsidiary to a more remote one, for surely civic nd social efficiency are not ends in themselves. The diagram n page 246 represents more completely the situation.

Thus we see that there is a hierarchy of aims involved teaching. They are related to one another, and if our cours and lessons are well planned they lead to some encompassi aim; for example, call it complete living. The remote ai that we have listed in the earlier part of this book under the v rious subjects are very remote but not ultimate. They are su sidiary to higher aims. However, they are ultimate enough f

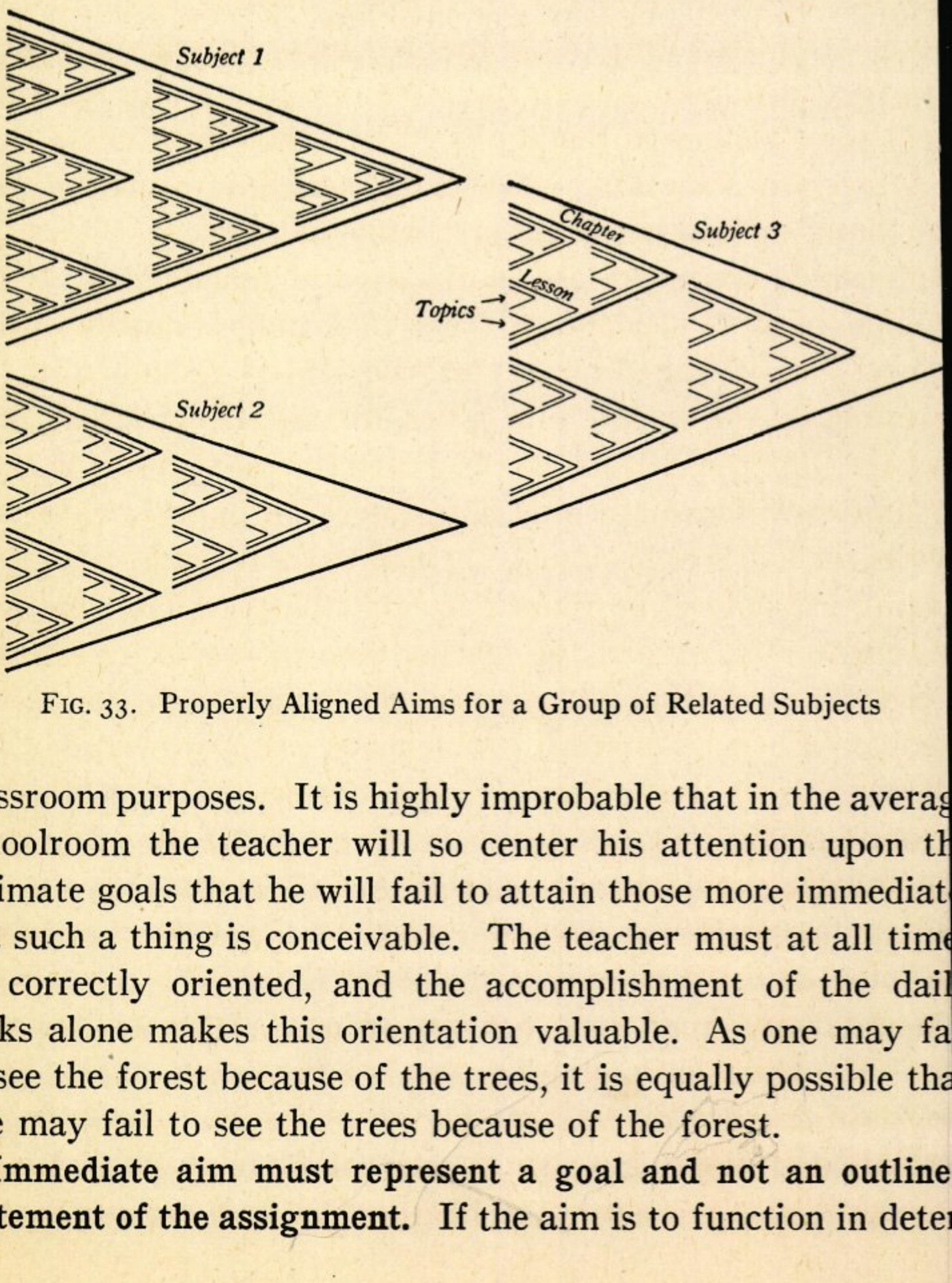


FIG. 33. Properly Aligned Aims for a Group of Related Subjects

classroom purposes. It is highly improbable that in the averag schoolroom the teacher will so center his attention upon th ultimate goals that he will fail to attain those more immediat yet such a thing is conceivable. The teacher must at all time be correctly oriented, and the accomplishment of the dail tasks alone makes this orientation valuable. As one may fa to see the forest because of the trees, it is equally possible tha one may fail to see the trees because of the forest.

Immediate aim must represent a goal and not an outline statement of the assignment. If the aim is to function in dete

ning the method of attack, the immediate aim must represent oal and not an outlined statement of the assignment. An aim useless unless it serves to focus the activities of the class riod toward something. The teacher of history, for example, o in preparing to teach a lesson on the organization of the vernment after the American Revolution should state as his mediate aim, "To discuss the coming into being of the various partments of government," is merely making a summarized tement of the nature of the lesson. Just to discuss or explain n never be an end. Even the most immediate aim must rep- sent some change in the pupils. The lesson must cause them appreciate something, must give added information, and ust build up new attitudes or change old ones.

Immediate aim must lead in direction of remote aim. It is a mmon fault of student teachers that their immediate aims not lead in the direction of the stated remote aim. If, example, the remote aim given for a spelling lesson is to ve the pupils spell such words as are commonly used in writ- g and the immediate aim is to have the pupils master the elling of five words, among them the word "gyneolatry," we ve an example of an immediate aim that is not in line with e remote aim. Again, the teacher who in preparing a lesson elementary arithmetic gives as the remote aim the ability solve such mathematical problems as arise in everyday life d gives as the immediate aim the mastery of the method of tracting cube root is attempting to go north by going east. he student should assure himself in each lesson that the im- ediate aim leads not only to a worthy remote aim but to the e stated at the beginning of the lesson plan.

Methods and aims must not be confused. The teacher who ys "My immediate aim of today is to have the pupils go to e board and put on the first ten problems, etc." is confusing ethods and aims. He should ask himself why he is having ose problems put upon the board. His first answer to this

question will probably be at least part of his immediate ai
As we said above, his aim always terminates with the pup
never with a method of bringing the material before the pup

Teacher must limit his aims to that which he can accompli in lesson. It must ever be remembered that to attempt t many things in a lesson results in doing nothing well. The o adage, "All that you do, do with your might; things done halves are never done right," was never truer than when appli to teaching. If we are trying to effect changes in our pup and are not merely teaching books and courses, we can seldo afford to brush lightly over many things. It is much better drive home a few fundamentals than to give a smattering poorly organized details. The details fall easily into line if t fundamental elements are comprehended.

Remote and external goals in mind of teacher and immedia interests and goals of pupils should not conflict. As we ha said before, the teacher must never lose sight of the remo goals in the process of directing pupil activity. This, howev does not imply that he is to force upon children the aims whi are external to them; that is, aims which do not grow out their social lives. The teacher must rather enter into t activities at the level of the pupils, skillfully setting such situ tions as will direct their experience toward goals which are d sirable. We learn to live by living, but not by living in an way. It is in that subtle and skillful directing which, on t one hand, does not destroy the naturalness of the child activity while, on the other hand, it successfully guides an directs this activity that the secret of good teaching lies. Th obtaining of such a condition is, however, a task for a maste in which the novice need not expect to succeed fully with an thing less than years of effort.

Schools not equipped fully to carry out ideals of pupil dire tion. The school system is a gigantic social institution and a such will be changed but slowly. Normal and healthy mov

nts here, as in the case of other large phases of social activity, ch as war, church, and home, take centuries for completion. e possibilities of the Dewey conception of education are be- nning to dawn upon us of the teaching profession. However, find the very physical structure and equipment of school ildings, to say nothing of the popular mind, suited to an old der and almost entirely out of harmony with the new. We as achers, whether individually or collectively, cannot change all is in a day. We must be patient and, taking conditions as we d them, lose no opportunity to inject into our practice such ements as are in keeping with the schools of tomorrow and at e same time not so entirely out of harmony with the schools today as to cause confusion.

SELECTED READINGS

LVIN, STEPHEN S. The Eighteenth Yearbook of the National Society for the Study of Education, chap. ii, pp. 190–212. This discussion deals with the function of a lesson plan, the relation of general to specific aims, common faults made by teachers in formulating the aims of the lesson, and method as a part of the lesson plan. It should be read in connection with Lesson XXIX, if not read in connection with Lesson XXVIII.

LVIN, STEPHEN S. An Introduction to High School Teaching, chap. xvi, pp. 334–359, "The Lesson Plan." The Macmillan Company, 1917. A good discussion of the lesson plan, accompanied by illustrations of common faults in making the lesson plan.

RKER, S. C. Methods of Teaching in High Schools, chap. iv, pp. 50–93, "The Selection and Arrangement of Subject Matter." Ginn and Company, 1915.

LESSON XXIX

Aim. To learn to make satisfactory plans for the first lessons.

Selection of unit of material to be taught, first step in making lesson plan. The student will begin the task of preparing a lesson plan by selecting a unit of subject matter suitable to a class period of instruction. Since lessons should be assigned as far as possible by topics rather than by pages, the material selected will be organized round some central thought or activity. The amount of text material will be determined (1) by the text treatment of the topic selected, (2) by the length of time to be given to the recitation, and (3) by the degree of difficulty offered by the subject. The student teacher should consult the supervisor upon this point.

Formulation of educational goals which unit of material is suited to promote, second step in making lesson plan. Having selected the unit of material, the student teacher will consider next the reasons for giving the pupils the experiences contained in the subject matter. First he will consider the major outcomes of education to which this material may be expected to lead. Is it economic, social, or cultural efficiency? Let us suppose that it is to lead to economic and social efficiency. Each of these very encompassing outcomes contains many goals just below it in rank. For example, social efficiency is made up of many specific adjustments, such as the ability to get the point of view of others, ability properly to evaluate one's personal social experiences, due regard for the rights of others in all personal contacts and relationships, a proper sense of one's social obligations, and the ability to recognize the proper relationships

e group to another. Once the student determines the remote tcomes in terms of attitudes or abilities for which the unit of aterial is most suited to prepare, he is in a position to formu- te the immediate goals which are possible and which are rected toward the given remote goals.

Determining and listing devices to be used, third step in pre- ring lesson plan. After the student teacher has determined e unit of instructional material and the outcomes both im- ediate and remote for which he is to strive, he is in a position consider the devices most suitable to his lesson project. The vices used will depend, of course, upon the content of the sson and the nature of the outcomes to be striven for. In rmulating the intellectual devices it is clear that the device of cturing might be justified at one point and the use of develop- ental questioning at another. The teacher while looking rough the material to be presented to the class should deter- ine the intellectual devices that he intends to use. He will etermine also the material devices which he will need. These ould be listed, as then it is necessary only to look over the list efore class to determine whether or not the needed materials re present. The supervisor also is in a position to suggest any esirable change in the physical equipment (see Lesson Plan, p. 272–273).

Relating new lesson to old, fourth step in making lesson plan. Having selected a suitable unit of material, determined the out- omes to be striven for, and listed the devices to be used, the udent teacher is now in a position to outline his attack upon he lesson. This outline should be placed under some such aption as "Description of Plan of Attack upon Lesson." The rst part of this outline will come under the subcaption "Sum- ary of Previous Lesson" or better perhaps "Relating Previous esson to Lesson of Today" (see Forms A and B, pp. 259–275). n the first plans, the student teacher should state in detail what to be done (see pages 259–277). The method should be quite

fully expressed or implied in the description. It is not enou to say "Bring out such and such facts by questioning." T questions should be listed, fully written out. There are, course, various ways of summing up the previous lesson. some instances it may be done by the teacher's using the lectu form. At other times a series of well-directed questions brin ing out and summing up the work of the previous lesson is mo desirable. Much depends upon the time at the teacher's d posal and the stage of the daily lesson in the project under wa It takes more time to sum up a lesson by questioning than lecturing, but it is generally more profitable to the pupils. T student teacher will note on pages 259 and 273 the two metho of summing up the previous lesson. It is not enough, however, sum up the lesson of the previous day; yesterday's lesson shou be made to serve as an introduction to today's, to put the pup in readiness to think about and understand that which is co ing (see Lesson Plan, pp. 265–266).

Describing attack upon body of lesson, fifth step in preparin lesson plan. The fifth step in preparing the lesson plan w come under the caption "Attack upon Body of Lesson" (see le son plans on pages 259–281). The form of the work at this pa of the plan will not differ from that under the subcaption "R lating New Lesson to Old." It is while laying plans for this pa of the lesson that the student teacher must keep immediate a remote aims constantly before him, for, as we noted in an earli part of this text, outcomes are the result of method as well of content; that is, methods employed to obtain one outcon will not serve in getting another. The plan of attack upon t lesson body should provide for a summary. It may be ve short, in some instances merely an enumeration of the poin made. This summing up is well provided for on page 260.

The assignment, sixth step in preparing lesson plan. Certa aims should govern the assigning of the lesson if it is to be effective guide to the pupils in the preparation of the work f

he following day (see Form A, p. 269). The student should list hese aims after the caption "Assignment of Lesson" and then e guided by them in working out the plan of assignment. lthough the assignment of the lesson is one of the most im- ortant functions of the teacher, good assignments are seldom nade. The writer believes that the following of aims in making esson assignments will do much to improve the assignments nd to form habits of care at this important point in the daily esson (see Form A, p. 260, for a well worked-out plan of ssignment).

Submitting plan to supervisor, seventh step in preparing lesson plan. After the plan has been completed in preliminary orm, it should be submitted to the supervisor for criticism. At is discretion it should either be left for reading and comment r be discussed in person with the teacher. The latter practice s much preferable if time permits. The plans should be in the ands of the supervisor at least three or four days before the esson is to be taught, to allow ample time for any changes which may be required.

Separation of method and content. Up to this point we have been dealing with the steps in content organization. Lesson lans may follow this order and yet differ widely in form, de- ending upon the extent to which method and content are sepa- ated. Writers in the field of supervision differ upon this point. Some are inclined to the view that such a separation is an rtificiality and does not exist in the process of teaching; hence he two should not be separated in making the lesson plan (see Lesson Plan, Form A). Others say that to separate method and content causes the teacher to attend to each by itself, thus avoiding the possibility of attention to one factor at the expense of the other. It requires a little more time and effort to separate method and content, but if such a plan (see Lesson Plan, Form B) is more useful we may nevertheless consider it. It is possible further to divide method by breaking it up into method

and procedure. This plan has the added advantage of preparin the teacher for the procedure by naming the procedure befor meeting it clothed with content matter. For example, the wor "quiz" prepares the teacher for a question, or the word "den onstration" for the task of demonstrating. These words stand ing by themselves may be noted readily and serve to give th teacher the proper set (see lesson plan, Form C).

Attention to form necessary in developing skill. The accom plished violinist may attend only to the notes or the theme, bu the beginner, if he is to develop effective technique, must atten to his manner of holding the violin and the bow. Method, o form, needs his special attention at this point, and devices tha will sufficiently direct his attention to his method are justified Of course, in the teaching process there must be a content a well. The outcome is important from the beginning. On th other hand, as we said above, correct methods, or forms, mus be established from the first if effective technique is to be de veloped. For this reason, of the three lesson forms suggeste there is much to be said in favor of Form C for student teacher who are just beginning.

Arrangement of subject matter. The arrangement of the sub ject matter is equally important in every form which the teache may follow. In the first place, if subject matter is separated from procedure, the material should be organized under topi headings, making units of a size convenient for treatment. Th topic headings of text material will often furnish such topics Care must be taken that the topics represent units of though and that such units are a vital part of the larger unit which i to be comprehended. The student teacher will be guided in thi process by studying the lesson plans that follow this discussion On the other hand, the arrangement of the topics is equally important. In just what order should the units be presented If the lesson plan is based upon a lesson in some text, it wil often serve to follow the order of topics given there. However

he teacher must be ever critical of the order of arrangement. exts are often written with the subject rather than the learner mind. The topics should be presented in such an order as to onform to the general principles of learning.

Known to unknown. The beginning teacher commonly makes he mistake of failing to consider that which the pupils bring o the situation, or, if he considers this question, answers it in erms of his own apperceptive mass. Either of these attitudes fatal to effective presentation. To quote Dr. Herbert Foster[1]:

> To say that instruction must take its beginnings in the familiar implies hat the teacher shall know what is the familiar. He must know the apperceptive mass" of those whom he would instruct. One of the most ommon as well as serious mistakes of the beginning teacher is that of verestimating the knowledge and experience of his students. Facts and udgments which are familiar to him and are mistaken by him for the cquisitions of his childhood may represent the gradual and unconscious cquisition of his college life and be quite unknown to the high school oy and girl. The teacher must be able to put himself in the place of the tudent, seeing things through the latter's eyes, and interpreting them in erms of his adolescent experience.

What a pupil will get from a given experience situation will lepend upon two factors: that which he brings to the situation, nd the manner in which the new experience is approached. Hence the first topic in the body of the lesson plan will have as ts purpose the summing up of the previous lesson and the re- ating of it to the new. In some lessons, however, the mate- ial previously learned will not form a direct background for hat which is to follow. In this event the subject matter for he first of the lesson will have to do with setting up the prob- lem and bringing to consciousness such old experiences as will enable the pupils effectively to attack that which is new. After arranging the subject matter for the introduction of the lesson the teacher must arrange the subject matter of the lesson body.

[1] Principles of Teaching in Secondary Education, p. 107. Charles Scribner's Sons. Reprinted by permission.

Simple to complex. In dealing with the question of simpli ity and complexity of subject matter one must remember tha what is logically simple may be pedagogically complex and tha what is logically complex may be pedagogically simple. A experience may prove very complex when analyzed and yet t the mind appear unitary and simple. One is proceeding fro the simple to the complex pedagogically when one analyzes flower or a social situation. The total situation is relativel simple. It is only as one analyzes to discover the unitary part and their relation to one another and to the totality that th situation becomes complex. Multitudinous relations becom apparent and complicate matters as one proceeds. On the othe hand, proceeding from the simple to the complex in such a sub ject as mathematics means the following of the logical orde Addition should precede multiplication. Hence we see that go ing from the simple to the complex does not always mean goin from the part to the whole but may at times mean going fro the whole to the part, and that what from the standpoint o science may seem simple and unitary may not be simple an unitary from the standpoint of the pupils' thinking. The maxim "Proceed from the simple to the complex" might better b stated, "Go from that which is simple for the pupil to tha which is complex for him." The student teacher will do wel to study his subject matter with a view to presenting it so tha the principle of proceeding from the simple to the comple psychologically is not seriously violated.

Concrete to abstract. The pupils must begin the study o qualities in their relation to the things or situations with whic they are experienced. The young child knows two sticks o candy from three sticks of candy. He connects twoness an threeness with each total situation in which he observes thi quality. In time he is able to deal with three apart from th situation. He has advanced from the concrete to the abstract But while we may juggle with qualities in the abstract, ou

forts do not function until we come back to concrete situations
d apply what we have discovered; that is, learning proceeds
t only from the concrete to the abstract but from the abstract
ck to the concrete. The child learns that 9 and 8 are 17, and
so that 12 and 5 are 17. These manipulations in the abstract
e brought back to the concrete and tested when he takes in-
ntory of such possessions as marbles. The tendency to test
d the ability to make applications of the generalizations
rmed are the ultimate tests of successful teaching. Hence in
ganizing the subject matter the teacher should be careful to
oceed from the concrete to the abstract but should also pro-
de for application of the principles developed.

Illustration. Foster reserves the use of the word "illustra-
on" in connection with lesson development for "that concrete
aterial which is employed in formulating the abstraction and
owing its implication. The concrete which follows the com-
eted abstraction is properly application."[1] Abstractions
ould originate in the concrete, and the greater the number of
od illustrations the more effective the lesson. In an excellent
iscussion of this topic Professor Foster in substance gives the
llowing requirements of a good illustration:

1. The illustration should be familiar to the student.
2. The illustration should be accurate.
3. The illustration should be as simple as is consistent with
ccuracy and adequacy.
4. Illustration should be significant; that is, the student
ould know what it is intended to illustrate.

Procedure. Along with the problem of so arranging the sub-
ect matter as to attain the aims of the lesson, there must be
onsidered the method of procedure, or the forms of develop-
ent. Methods have been classified in many ways, but the
llowing classification seems best for the purpose of preparing

[1] Herbert H. Foster, Principles of Teaching in Secondary Education, 111. Charles Scribner's Sons. Reprinted by permission.

lesson plans: lecture, discussion, recitation, demonstration, an drill. No one of these methods can be used to the exclusion o the others in any lesson that is successfully taught. There ar times in any grade or subject when the teacher should lectur The amount of lecturing, however, will depend upon the ma turity of the pupils and the nature of the subject. No hard an fast rules can be laid down here. In general, it may be said tha the lecture and recitation methods are much overworked an the discussion and drill methods underworked. One of the im portant outcomes of education is the problem-solving attitud We wish to train pupils to reflect and to accept the problems o life as a challenge to their intellectual powers. If this outcom is to obtain, a good deal of problem-solving must be done in th schools. Instead of asking the pupil to recite upon a give topic, it is often much more fruitful to test his knowledge o the facts by challenging him to utilize the facts.

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COLVIN, STEPHEN S. An Introduction to High School Teaching, chap. xv pp. 334–359, "The Lesson Plan." The Macmillan Company, 1917. Th chapter is especially valuable for its discussion of the aim in connectio with lesson planning.

COLVIN, STEPHEN S. The Eighteenth Yearbook of the National Society fo the Study of Education, chap. ii, pp. 190–212, "The Lesson Plan and i Value to the Student Teacher." Public School Publishing Compan Bloomington, Illinois, 1919. This is perhaps the best discussion that ha been written on the lesson plan.

EARHART, LIDA B. Types of Teaching, chap. xv, pp. 220–236, "Making Lesso Plans." Houghton Mifflin Company, 1915. A good discussion dealin with the making of lesson plans. The appendix of the book contain several model plans for lessons. A student can obtain valuable suggestion from them.

PARKER, S. C. Methods of Teaching in High Schools, chap. xxi, pp. 475–49 "Practice Teaching and Lesson-Planning." Ginn and Company, 191[illegible]. Th chapter deals with practice teaching and lesson-planning largely from th standpoint of the supervisor but may be read with profit by the studen

STORMZAND, M. J. Progressive Methods of Teaching, chap. xii, pp. 327–35 "Planning Instruction." Houghton Mifflin Company.

AYER, GEORGE D. A Brief Course in the Teaching Process, chap. xvi, pp. 167–223, "Lesson Plans." The Macmillan Company, 1911. This chapter contains examples of many well-worked-out lesson plans.
PLES, DOUGLAS. Procedures in High-School Teaching, chap. ix, pp. 138–147, "The Lesson Plan." The Macmillan Company, 1924. Contains several good suggestions for the making of lesson plans.

LESSON PLAN (FORM A, OUTLINE TYPE)

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Algebra 9B

Remote aims

a. To develop the habit of generalization and thinking in terms of symbols

b. To be able to solve such problems as are necessary to an understanding and an effective use of materials found in other subjects

c. To lay the basis for further technical training for those who are to enter fields requiring higher mathematics

Immediate aims

a. To teach the squaring and cubing of monomials

b. To drill on problems until the pupils can readily expand the monomials

Physical devices to be used

a. Blackboard and chalk

b. Textbook

Description of plan of attack on lesson

a. Summary of previous lesson

(1) Define

(a) Factoring

(b) Prime number

(2) Give rules for

(a) Squaring a monomial

(b) Cubing a monomial

b. Attack on lesson body
(1) Exchange home-work papers
(2) Have each member of the class give the answer for
problem
(3) Have any problem that may seem to give difficulty put
the board
(4) Have papers graded (4 per cent off for each mistake)
(5) Return papers
(6) After allowing a few minutes for children to look over th
papers and ask questions, have papers passed forwa
(7) Give squares of the numbers from 1 to 20
(8) Give cubes of the numbers from 1 to 20
c. Summary
(1) Close books
(2) Give the rules for
(*a*) Squaring a monomial
(*b*) Cubing a monomial
5. Making new assignment
a. Aims of teacher
(1) To show how old assignment leads to new work
(2) To create interest in new lesson
(3) To point out difficulties
(4) To give pupils means of determining when a lesson is
prepared
b. Preparation for new assignment
(1) What sign does the square of a positive monomial have?
(2) What sign does the square of a negative monomial have?
(3) When squaring a monomial, what do you do with
(*a*) The exponents of the literal factors?
(*b*) The coefficients?
(4) Now suppose that you are given an algebraic expression
one term and told that it is a perfect square. In findi
the square root, what would you do with
(*a*) The exponents of the literal factors?
(*b*) The coefficients?
(5) Find the square roots of x^2, $4x^4y^2$, $16r^2s^4$, $64y^2z^6$
(6) Find the cube roots of a^3, x^6, $8y^9$, $216m^3n^9$
(7) Test your results by squaring them

(8) Formulate a rule for extracting the square root of a monomial that is a perfect square
(9) Substitute (in the foregoing rule) the correct form of the word "cube" for the forms of the word "square"

c. Assignment: Exercise 52. Write out answers to problems 1 to 25

LESSON PLAN (FORM A, COMPOSITION TYPE)

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Botany 9A

Friday, March 11, Fourth Period

Remote aim: To develop an economically efficient being, but one possessing an avocational and cultural equipment

Immediate aims

a. To appreciate the likeness between the working of the plant body and of the animal body
b. To learn the various functions of the plant body—how they came about and their purpose
c. To learn how the parts of the plant work in unison

Devices to be used

a. General physical: textbooks, blackboard, reference books
b. Special physical: ink, notebooks, microscopes, slides
c. Intellectual
(1) Lesson types: conversational development, recitation, experimentation
(2) Examination type: "True-false" test

Method of attack upon lesson

a. "True-false" test
(1) In most seed plants the chlorophyll-bearing cells are found chiefly in the leaves
(2) Sugar is always used by the plant as soon as formed
(3) Change of sugar into starch is not brought about by the chlorophyll
(4) Stored food is found only in the seeds of plants

(5) During respiration plants take in oxygen and give
carbon dioxide
(6) In the production of carbohydrates, carbon dioxide
taken from the air and oxygen is given off
(7) During a bright day green plants take in more oxyg
than they give off
(8) Leaves are chiefly the parts of the plant from wh
water is chiefly lost by evaporation
(9) On hot days the evaporation of water from leaves he
to cool them
(10) Air pores on the surface of leaves have nothing to
with evaporation

b. Discussion of answers to test questions

c. Lesson proper

Today we take up in order transpiration, photosynthesis, and respirati

Who will give me first of all a definition of transpiration in plan
(The process of giving off water in the form of vapor, from the stom
of plants, is called transpiration.)

As we go farther south we find in the damp places trees with la
leaves, and in the dry places trees with practically no leaves. Can so
one explain the first fact—that trees in the damp places of the So
have larger leaves than those up here? (Discussion: Under humid
mospheric conditions transpiration, other things being equal, is not
great as under dry atmospheric conditions. The size of any part of
plant is dependent upon a continuous sugar and starch supply. Si
there is less interference with photosynthesis by water vapor escap
through the stomata under humid conditions, more food is manufactu
than under ordinary conditions. Thus the leaves, which share this fo
with the rest of the plant, grow larger. This is also true of plants gro
ing in the shade, as the dandelion, which has larger leaves in the sha
and smaller ones in bright, open, sunny places.)

Now we will go to the other extreme of which I spoke; namely, t
condition in which the tree has practically no leaves. (Discussion:
dry places like the desert it is necessary to conserve the water, and th
we find only cactus plants with tough and small leaves giving a sm
evaporation surface.) Why is it necessary to conserve moisture? W
is liable to happen if evaporation is too rapid? In what other wa
does nature protect her plants from too rapid evaporation? (Ha
cutin, wax.)

The pine tree is a native of dry, cold climates and has roots which tend for a great distance into the earth. The willow, on the other hand, lives in a semiwarm, moist climate. This tree possesses short but widely spreading roots. Explain this fact.

The process of transpiration, or of evaporation, is not a mere drying but is an important function of the leaves of most seed plants and of the higher spore plants. In such forms as the cactus, which is practically leafless, transpiration is performed by the epidermis of the stem. Thus we can say that other parts of the plant body may perform this function, although the leaf retains it as its own function.

Now we know a little concerning this very important function of the plant body. What function of our own body takes the place of transpiration in the plant body? Perspiring. Compare the act of perspiring with transpiration. (Air pores, cooling, taking in water.)

We will leave transpiration for the time being, but will remember it and recall it time and time again in our discussion of the internal structure of the leaf.

The next function is not given a technical name in our book, but in your outside references I am sure that someone came across the word "photosynthesis." Just what is meant by photosynthesis?

The manufacture, by the plant, in tissues exposed to sunlight, of carbohydrate food from raw materials is known as photosynthesis (photo, "light"; synthesis, "putting together"). Let us liken the whole process of photosynthesis to the operation of a factory. Consider the leaves as the building, the sunlight as the heat, or power, the chloroplasts as the machinery, the enzymes as the workers, carbon dioxide and water as the raw materials. Sugar and oxygen result as the finished products.

The sugar is not stored in the leaves. Why? (Soluble in sap.) Where is it stored and in what conditions? (In seeds, fruits, bulb stems, and roots. Sugar in grapes, protein in beans, starch in potatoes, fat in nuts.)

I should think that when a plant goes on forming carbohydrates day after and day out, so much would eventually be formed that the cells of the leaf would be full and it would be impossible to carry on photosynthesis any more. Explain.

If the plants continue using carbon dioxide as fast as our book says they do, why is it that they do not use it all up? (Animals decay as well as vegetables; burning of fuel.)

Did anyone find in his physiology anything in the human being to compare with this function of plants? Discuss.

5. Making new assignment

a. Aims

(1) To show how old assignment leads to new work

(2) To create interest in new work

(3) To point out difficulties

b. Assignment

We have at various times throughout the course pointed out analog between the functions of plant and of animal life. We have just finish the study of transpiration, called in the animal world "perspiratio We have learned that both plants and animals perspire. Tomorrow shall take up respiration, which is another life function common to pla and animals. Respiration in the animal world is called breathing—t taking in of oxygen and the giving off of carbon dioxide, CO_2.

In preparing for tomorrow's lesson try to account for the fact th animal life is not injured by the poisonous carbon dioxide which is bei continually given off by plants and animals. You will find the answer well as a discussion of respiration and its functions on pages 248–2 of the text.

6. Laboratory instruction

To understand how the plant carries on these various functions which we have been speaking, it is necessary to know something of t structure of the plant body.

I have here some prepared slides containing cross sections of leav from the lily of the valley. Draw one of these carefully and label all t parts—upper epidermis, palisade cells, spongy mesophyll, air spac veins, stomata, and lower epidermis. You will find a good diagram your book on page 139. Compare this diagram with what you see in t microscope, but make your drawing of what you see on the slide.

When you have finished, take a new piece of drawing paper and dra an enlarged stoma. Label the guard cells and the opening.

7. Laboratory supervision

Immediately after laboratory instruction I shall ask the class to go the laboratory for work, each taking a specimen and a microscope as passes my desk. In the meantime I shall have prepared the specime for distribution and shall have seen that the microscopes are ready. soon as the pupils are seated I shall go around, seeing that each pupil properly supplied and ready to proceed.

LESSON PLAN (FORM A, COMPOSITION TYPE, PUPIL RESPONSES ANTICIPATED)

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: English Literature 11B

Tuesday, November 9, Third Period

Remote aims

a. To prepare the pupils for the leisure hours of life by giving them

(1) Beautiful expression for the thoughts which experience will bring to mind

(2) An appreciation of literary expression which will cause them to turn to literature later as a source of life's deeper satisfactions

b. To bring about a firmer social unity through a common body of literary experience

Immediate aims

a. To reveal the personality of Johnson

b. To give an appreciation of the personality of Johnson

Physical devices to be used

a. General: textbook

b. Special: pictures of Johnson

Description of plan of attack on lesson

a. Summary of the previous lesson

Teacher. For the last two days we have been discussing two of the eat essayists—Addison and Steele. We decided that, as far as we can ll, they were fairly representative of the eighteenth century. Do you call what characterized their essays?

Pupil. A conversational tone, wit, fluency, humor.

T. Exactly. And what do you recall about their style?

P. Familiar, simple, polished.

T. Yes. These two, we know, had not a little influence in the London f their time. They were successful writers and more or less popular ocially. Addison died in 1719 and Steele in 1729.

b. Description of attack on today's lesson

T. Just six years after Steele's death a young man with the v prosaic name of Samuel Johnson came to London. Do you know h he entered the city? Just use your imaginations.

P. He was poor—he probably was very shabby.

P. He probably had to walk.

T. He very probably had to walk, and undoubtedly he was v shabby. He probably had only the clothes on his back. What he acco plished in London, I presume you all have read in your texts. So we w forget about that and talk about Dr. Johnson himself. It has been s of him that his personality was greater than his literature. How do y account for that?

P. Well, nobody reads what he writes.

P. He influenced other writers.

T. I believe that his influence on other writers and on other men w followed other professions—for he influenced more than merely writ —accounts for that statement better than the fact that no one reads writings. Granted then that he influenced other men, we want to fi out *how* and *why* and we want to know who these men were. We start out to talk about personality. What is personality?

P. It is everything about a man.

P. It's his education.

P. It's his bringing-up.

T. Which of these answers is correct?

P. All of them.

T. Then his personality is the sum total of a man, may we sa Very well, let us look at Dr. Johnson and try to find out what is the su total—the personality that is so great. Tell us something about life first.

P. He was a bookseller's son. He went to Oxford and couldn't affo to stay very long. Then he tried to teach school but couldn't get a pupils. Then he went to London, where he wrote for some magazin and published a dictionary and some other things. He never made mu money, and what he did make he gave away. His publishers always g the biggest slice. He started a Literary Club and everything he said *we*

P. He married a widow with several children. She was old and ug and not very good to him, but he thought she was just right.

T. That is the bare outline of Johnson's life. However, I belie you have illustrated three of the four great characteristics of Johnson

at I call the four great characteristics. What have you illustrated? yone.

P. His generosity.

T. How?

P. He gave away most of what he had.

T. Yes, you know Johnson had a very soft heart. He was continually lping Goldsmith out, for Goldsmith couldn't save anything. In a court ar Fleet Street, Johnson had a home that he turned really, if not intionally, into a home for anyone who might touch his heart. The sortment of old people he had there would have been funny if they d not been so pitiful—old wrecks he had picked up off the streets of ndon, who would have been in the poorhouse but for him. It was a d spectacle to see them. It was sad, too, that they were not the least ateful, even in appearance, and often complained about their food. ow, what other characteristic was illustrated?

P. His loyalty.

T. Yes. How he clung to his wife! She was a dull, shrewish person, seems, not very kind to him but yet attached to him. He was very arsighted, so he couldn't see that she was a coarse, painted creature ice his age. He waited on her, idolized her as though she were a incess, until her death, and long after her death he spoke of her with ve and admiration. Do you recall any other characteristic?

P. He always had his own way in the Literary Club.

T. Exactly. Suppose we call that his "dogmatism." Before we talk out his dogmatism and the Literary Club, suppose we list the members d their professions. Who were they?

P. Gibbon, historian.

P. Burke, orator.

P. Goldsmith, writer.

T. Any others? There is Reynolds, a painter; you should know m. And Fox—Charles James Fox—a young Whig statesman. And avid Garrick, one of Johnson's few pupils in his teaching days, later an tor of great genius. You should all know this of Garrick, that his reval of Shakespeare took London by storm. Sheridan, the playwright, d Jones, the greatest linguist of the time, were also members of the ub. Wasn't that a very versatile group of men? And over them r. Johnson maintained unquestioned rule. How do you suppose he did it?

P. He was a good talker and a good critic.

P. He was honest and fearless.

P. He had read a lot.

T. You have given the real reasons, I believe. He was the wid read of all that group. He was an excellent talker. It is said that was a better talker than writer because when he talked he didn't ca to such an extreme his long involved sentences and his use of Latiniz words. He dominated the conversation in the Literary Club. He ov ruled every opinion counter to his own. He had a giant intellect—p haps we might say that the very size of his intellect crushed his ponents. Those opponents didn't agree with him always. They were of an independent cast of mind. But they respected him very mu They knew what a struggle his life had been and how, in spite of all od he had won. They couldn't help but respect him. They knew his g erosity—some of them had profited by it; they knew his loyalty; th did not resent his dogmatism, because they felt his real superiori There was one other characteristic that they appreciated which no o mentioned in particular. Does anyone recall it? No? His indepen ence. Your text told the story of his relations with Lord Chesterfie Probably those men admired him most for his conduct toward th nobleman.

I think we are justified in saying, then, that Dr. Johnson was spected because of his loyalty, his generosity, and his independence mind; that because he was respected his domination was accepted these members in the Literary Club. By saying his domination was a cepted I do not mean that they believed everything he said; I me they did not quarrel or dispute with him. Almost all his literary juc ments have been reversed now. Many of his associates were mode enough then to see clearer than he; but because he was what he w they considered his word as much as theirs. Among the nonlitera people his word, which was really old-fashioned, was more popular, mo readily accepted than that of the other members of the club. That why his judgment on a new book could make it or ruin it. In literatu he belonged to the age that was passing. Some of those men who we members of the club were of the new age—Goldsmith, for instance.

Before we leave Dr. Johnson we want to have an idea of his perso appearance. Look at this picture. Notice the massive head, the clum body, his general untidiness. It is said that those who loved him h much to forgive because he was so untidy and had such abominal manners. He was frequently cross and gruff, too, for all through his l he suffered much from an incurable disease.

We know now what Johnson looked like, what sort of man he w and with whom he associated. Do any of you believe that the stateme

th which we began the lesson—that his personality was greater than s work—is justifiable?

P. Yes.

P. Yes.

P. Yes.

T. Why?

P. Well, if he was respected, his opinion would be respected. Even eople who didn't read his writings would know what he said, because was probably talked about. Everyone who liked him and knew what nd of man he was would feel that his opinion ought to be respected.

T. Exactly. So his opinion traveled faster by force of his personality an by force of his writings.

Making new assignment

a. Aims

(1) To create interest in the new lesson

(2) To point out difficulties

T. We've been spending some time, now, on the great figures in the ge of Classicism. There are several others whom we cannot afford to verlook. We mentioned some when we spoke of the Literary Club. Who were they?

P. Burke, Goldsmith, Gibbon.

T. Yes, and one more. Whenever we mention Johnson we think of omeone closely connected with him. Whom?

P. Boswell.

T. Yes. So tomorrow we will round out our study of this age with consideration of these men. You will not have any trouble with Bos-ell or Gibbon, I believe. Be very careful when you come to Goldsmith. We said today that he belonged to the age following the Age of Classi-ism. Try to discover why he is included in the chapter on Johnson, oswell, Burke, and Gibbon. To appreciate Burke you must know some-ning about the history of England in this period. He was a member of arliament. Assuming that his manhood covered the years 1750 to 1797, hat world events would claim his attention?

P. The American Revolution and the French and Indian War.

P. The French Revolution.

T. Any others? No? There is one other of importance. I want all f you to read upon it. It is the beginning of English domination in ndia. Pay close attention to what your authors say about the *results* hat Burke's oratory accomplished. That is all.

LESSON PLAN (FORM B)

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Reading 1A

Monday, April 23, First Period

1. Remote aim: To enable the pupils to gather thought rapid
   and accurately from the printed page
2. Immediate aim: To enable the pupils to read the story
   "Little Red Hen"
3. Physical devices
   a. *New Beacon Primer*, pp. 39–43
   b. Blackboard with the following written upon it

Little Red Hen
five little chicks
the cat
the dog
the duck
the pig

4. Description of plan of attack upon lesson

INTRODUCTION

Subject Matter	*Method*
Developing interest in the story of "Little Red Hen"	*T*. We are going to read a new story this mor ing. Some of you have heard this story, but y have never read it. Can you find this page in yo book? [Write *39* on the board.] The number is the top of the page over the picture. What do y see there? A pig, a dog, a cat, a hen, a duck? *P*. Some little chickens. *T*. How many chickens are there? *P*. Five. *T*. Yes, five little chicks. Let's see if we can fi where the board says "five little chicks." [C

upon pupil to point to "five little chicks."] What do you suppose the hen is called? Can we find out on the board? [Have children find "Little Red Hen" upon the board.] Can we find the names of the other animals on the board? [Have children find "the pig," "the cat," "the duck," "the dog."] Now let us read the story on this page.

BODY OF LESSON

Subject Matter	*Method*
eading lesson to middle of page 40	*T.* Let us read it together. [Let teacher and children read in unison through first six lines of page 40.] I wonder if [name pupil] can read it. [Call on others to read to the bottom of page 40.]
eading lesson from top of page 41 to middle of page 42 bservation and discussion of pictures	Let teacher and pupils read in unison through first four lines on page 42. *T.* Let us look at the picture at the top of page 42. What have we in this picture? *P.* Little Red Hen, her five little chicks, the other animals, the cake. *T.* I wonder what Little Red Hen is doing here? *P.* She is going to bake her cake. *T.* Yes, she is going to bake her cake. Do you suppose the animals helped her? Let us read and find out.
eading lesson from middle of page 42 to bottom of page 43	Let teacher and children read in unison. Then after all have read through it together, call upon individual pupils to read. *T.* What did Little Red Hen say when she had mixed the cake? *P.* "Who will bake my cake for me?" *T.* What did the other animals say? *P.* "Not I."
omments upon reading	*T.* What did Little Red Hen say after the cake was baked? *P.* "Come and see my cake. Who will eat my cake?" *T.* What did the animals say? *P.* "I will."

T. Did they eat it?
P. No.
T. Who did eat it?
P. Little Red Hen and her five little chicks.
T. Next time let us see if we can play the sto

Providing for interest in further reading of the story

of "Little Red Hen."

LESSON PLAN (FORM B)

STUDENT TEACHER: XXX
SCHOOL: XXX
CLASS: American History 11B (Fourth Period)
Wednesday, December 8

1. Remote aim
   a. To prepare the pupils for civic, social, and cultural ef ciency by
      (1) Giving them a broad understanding of the progress civilization
      (2) Developing ideals
      (3) Noting recurring pitfalls in the path of progress
      (4) Developing an understanding of modern institutio through a study of their origin and development
2. Immediate aims
   a. To develop the idea that government is a gradual growth an not an immediate creation or something thrust upon th people all at once
   b. To develop an appreciation of the functions of the three gre departments of government
   c. To develop the idea that the great questions of government administration, function of the Constitution, etc. are liv questions which are always before us
3. Physical devices to be used
   a. General
      (1) Textbook: Muzzey's *American History*
      (2) Reference books
         (*a*) McLaughlin's *History of the American Nation*

(*b*) Old South Leaflets 4 and 5
(*c*) Fiske's *The Critical Period of American History*
(3) Blackboard

b. Special
(1) Ink and pen } To be used in a summary of the weak-
(2) Notebooks } nesses of the articles
(3) Map of the United States

Description of plan of attack upon lesson

REVIEW OF PREVIOUS LESSON

Subject Matter

eneral review of the rticles of Confed- ration: their merits nd defects

Method of Presentation

The Articles of Confederation set up a form of government which lasted only a short time.

1. Advantages and achievements
   a. The first formulation of a national government
   b. Cession of Western lands and the Ordinance of 1787
2. Defects
   a. Congress had responsibility without authority
   b. States retained full sovereignty
   c. No executive department
   d. No judiciary
   e. No power to levy and collect taxes in confederated government. Congress could only ask the states for contributions, and the states did as they pleased about paying
3. Results
   a. Government was looked upon as weak by other nations
   b. Conflicting interests of states threatened anarchy at home
   c. Able men lost interest in Congress, preferring to serve in state legislatures
4. Efforts to improve the situation
   a. Mount Vernon and Annapolis conventions, the latter giving rise to
   b. Constitutional Convention in Philadelphia, 1787
      (1) Virginia and New Jersey plans
      (2) Extremists
      (3) The "Great Compromise"
      (4) Further compromises
5. Ratification of the Constitution

BODY OF LESSON

Subject Matter	*Method of Presentation*
How the Constitution was an improvement over the Articles of Confederation (Muzzey's *American History*, pp. 146–148)	Today we are to examine the new plan of gover ment to see how it differs from the old. Especia we want to notice just how it represents an attem to avoid the weaknesses of the old. 1. Where is sovereignty now lodged? 2. How many departments of government w created? 3. Contrast Congress under the Constitution w Congress under the Confederation *a*. Chosen by people directly and responsible them rather than to state legislatures *b*. Powers of Congress 4. Powers left to the states
The executive department (see Muzzey's *American History*, pp. 149–151)	5. Powers of the president, how exercised? 6. President's cabinet *a*. To whom is it responsible? *b*. Compare with cabinet ministers in Europe 7. How is the president chosen?
The judicial department (see Muzzey's *American History*, p. 151)	8. Under what systems of law do citizens of the Unit States live? 9. Supreme Court of the United States *a*. How is it composed? *b*. What are its powers and duties?
Extensions of the original Constitution (see Muzzey's *American History*, pp. 151–153)	10. "Unwritten laws" of the Constitution. Have a of those "unwritten laws" been challenged recent years? 11. The Bill of Rights 12. Amendments to the Constitution 13. "Implied powers" of the Constitution. Have "strict constructionists" and "loose constru tionists" today?

ADVANCE ASSIGNMENT

Subject Matter	*Method of Presentation*
Washington's presidency and the beginnings of political parties (Muzzey's *American History*, pp. 155–164)	Although Washington was chosen president the unanimous vote of the Electoral College, in h first administration we shall find the cabinet, Co gress, and the country dividing into two clearly d fined parties. Indeed we have already had a hint

such division in "loose constructionists" and "strict constructionists."

e United States in 1789

In the next lesson we shall see something of the conditions of life in the new United States of America, and something of the opportunities offered by the sale of public lands.

e inauguration of the government; the first cabinet

We shall compare the conditions of Washington's first inauguration with those of a presidential inauguration in the twentieth century, and shall note the ways in which Washington worked out a plan for the executive department of the government.

e business before Congress

What was the great problem of the men who stood behind Washington all through the Revolution? We shall see in tomorrow's lesson that the most urgent of all the varied business before Congress was the establishment of the country's finances, and how the first Secretary of the Treasury, the brilliant young Alexander Hamilton, met the financial problems.

tagonism between Hamilton and Jefferson: Federalists and Republicans

We shall see how Hamilton in building up the nation's credit helped to unify the nation in the eyes of the world, and how he was opposed by certain "special interests" which joined with the "strict constructionists" to form the Republican party.

LESSON PLAN (FORM C)

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Arithmetic

Continuation-School Boys (Fifth Period)
Friday, January 14

Remote aims

a. To aid pupils to solve arithmetical problems arising in every-day life

b. To help pupils to aspire to some individual business project, however small

c. To show the advantage of being owner rather than employee

2. Immediate aim
   a. To give the student a working knowledge of the arithmeti processes involved in running a "Coney Island" stand
3. Devices
   a. Informal conversation directed by questions
   b. Blackboard
4. Plan of attack

Subject Matter	Method	Procedure
Expenses and profits of running a "Coney Island" stand at a county fair		
Things seen at fair	Develop three informal conversations	Brief discussion of La County fair. Ment things to be seen the among them the "Cor Island" stand
Profit in stand	Questions	Do you know anyone w runs one of these stand Does he make mu profit?
Steps necessary to secure permission to erect stand. Ground leased at five dollars per foot of frontage	Lecture and questions	Explanation of the wor "leased" and "fc front." How many feet frontage will be neede Amount of space f stand left to class de sion, merely guided teacher. Approximate ten feet. How much w this space cost?
Necessary equipment for stand: lumber, tent, stove, and utensils	Questions to bring out item of expense	Estimate cost of lumb and cost of renting ten stove, and utensils
Necessary foods: prices and quality	Development by lecture and questions	Suggestions concerning sp cial prices for quanti buying: sausages, cents per pound a seventeen in a poun rolls, 15 cents per doz if bought in quantiti
		Can you think of any foo we shall need in add tion to sausages a rolls? Mustard, pickl etc.

essary helpers and their ages	Develop by lecture and questions	Which days usually have the largest attendance? Class decides on number of helpers, usually two, and the wage per hour or day
mber of people likely to e served each day	Lecture	May have extra help on Thursday and Saturday 300 persons served Monday; 450 persons served Tuesday; 850 persons served Wednesday; 1300 persons served Thursday; 950 persons served Friday; 1250 persons served Saturday One 10-cent sandwich sold to each person
mputing earnings	Problems on blackboard and individual aid in the solution of them	How many pounds of sausages were used? How much did they cost? How many dozen rolls were used? How much did they cost? How much did each helper earn? What was the total expense? How many persons were served during the week? How much money was received on Monday? on Tuesday? on Wednesday? on Thursday? on Friday? on Saturday? What was the total amount received? What was the total expense? What was the profit?
mparison of results	Question and discussion	Compare answers and locate errors

Assignment

Next week we are going to talk about percentage and we will find out
t what a 5 per cent cut or a 15 per cent raise in pay would mean to
u. If you know the exact wages of your father or of a friend we will
o figure his cut or increase in pay.

PROJECT PLAN

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Geography, Sixth Grade (Fourth Period)

THE MUSCLE SHOALS

Approximate time: One wee

Topic: The use of water power in the production of nitrogen.

Centralizing idea: The problem of supplying nitrogen at Musc Shoals.

1. Remote aim: To develop individuals who are socially a civically efficient by developing an appreciation of the poss bilities of the conservation of natural resources and the poss bilities and limitations of government ownership
2. Immediate aims
   - *a.* To develop an appreciation of the possibilities of using wat power as a means of obtaining energy and thus conservi natural resources in the form of coal and oil
   - *b.* To give an understanding of the process of obtaining nitrat and an appreciation of the value of nitrates
   - *c.* To develop an appreciation of the problems involved in go ernment ownership and to show the advantages of gover ment ownership of those resources which vitally affect t national well-being
   - *d.* To develop an appreciation of the possibilities of Musc Shoals as a nitrogen-producing plant
3. Materials: Twenty-five copies of *The Muscle Shoals*, b Charles A. McMurry
4. Plan of attack
   - *a.* Discussion topics (each to form the centralizing idea f one day)
     - (1) How Muscle Shoals came to the front as the preferr water-power undertaking

(2) Advantages of Muscle Shoals as a nitrogen-producing plant
(3) Use of Muscle Shoals in the production of fertilizer
(4) Why the government of the United States should undertake this project
(5) The Hale's Bar project
(6) The Keokuk dam and power station

b. Assignments
(1) General: Assign all to read *The Muscle Shoals*
(2) Special (assignments to special readings for group reports)
(*a*) Problem of supplying nitrates
(*b*) Suitability of Muscle Shoals for the task of supplying nitrates
(*c*) A comparison of Muscle Shoals and Hale's Bar dam with respect to the difficulty of construction
(*d*) A comparison as above of Muscle Shoals and the Keokuk dam
(*e*) Shall the government control or lease Muscle Shoals?
(*f*) The advantages and disadvantages of Mr. Ford's offer from the standpoint of the government
(*g*) Present status of Muscle Shoals with respect to construction and leasing

. Classroom methods
a. Class discussion
b. Reports
. References

a. Muscle Shoals Project. Report by United States Army Engineers. Tennessee River Improvement Association
b. American Gibraltar, Muscle Shoals. Prepared by Nashville Section Engineering Association of the South. Muscle Shoals Association, Nashville, Tennessee
c. SWITZER, J. A. Water Powers of the Tennessee. State Geological Survey, Nashville, Tennessee
d. SWITZER, J. A. "The Power Development at Hale's Bar," in *The Resources of Tennessee*. State Geological Survey, Nashville, Tennessee
e. Water Power Development in the United States, 1912. Government Report
f. "Water Power Development on the Mississippi River at Keokuk, Iowa," in *Engineering News*, September 28, 1911

g. Speeches of Edward B. Almon in the House of Representatives January, 1919, in December, 1920, and in March, 1921. Congressio Record

h. *Survey*, Giant Power number

i. Report. Giant Power Survey Board

THE MUSCLE SHOALS

LESSON PLAN FOR FIRST DAY[1]

Aim

How Muscle Shoals came to the front as the preferred wate power undertaking.

Outline of points (see pages 5 and 6 of pamphlet).

1. The present situation at Muscle Shoals. Amount of wo already completed on the Wilson dam.

2. The discussion in Congress as to what is now the best thi to do with Muscle Shoals.

3. The problem as it first presented itself at the beginning of t war, and the use of the Shoals for war purposes.

4. Description of the Shoals, the amount of water pow available.

5. The proposal to establish a nitrate plant.

Suggestions bearing on Method

Call for current news bearing on this topic. Let children repo on what they find in the newspapers and magazines. The Fo offer and other proposals.

Get a definite statement as to what has been thus far accom plished and its cost and the work yet to be done.

The helpless condition of our government with respect nitrates at the beginning of the war. How Germany supplied he self with nitrates.

This nitrate project was first suggested to Congress as a w measure. Why should Congress take the lead?

What other water powers in the United States might considered?

Experts were appointed to make a careful survey of Musc Shoals and other water powers in the United States. Provide map

[1] Prepared by C. A. McMurry.

grams of the Shoals and dams. The drop of 140 feet, the high nks, and the effect upon the river of a dam 90 feet high. At- mpt to appreciate the vast and expensive constructions required a study of the whole situation.

In past times expensive dams and locks were built to aid river vigation, but were not very successful.

What are some of the difficult government problems that will ve to be met and solved now that the government has decided complete this great project?

Assignment of the Second Lesson

Be prepared to review and to explain clearly the topics outlined d presented in the first lesson. Let children sketch on the board y maps or diagrams placed before them in the first lesson.

Be prepared to discuss (1) the usefulness of Muscle Shoals a nitrate-producing plant, (2) the amount and regularity of wer, (3) the location within the safety zone, (4) the expense of nstruction. What are other possible sources of nitrates?

The assignment in advance extends from the bottom of page 6 page 11 in the pamphlet.

Draw a map of the Tennessee River, showing the location of Iuscle Shoals.

Encourage children to read and make reports on articles in urrent papers and magazines.

Begin to make a collection of maps and pictures bearing on e subject.

LESSON XXX

Aim. *To utilize more effectively the lesson plan and be bett prepared for other matters affecting the successful prese tation of the first lesson.*

Lesson plans to be utilized in the process of teaching. Less plans are made only because they result in better teaching; th are means, not ends in themselves. The student teacher has n been asked to make one for the sake of form or for the purpo of consuming his time. The making of a lesson plan requir a study and reorganization of the material which must be a complished by the one who would teach the lesson successfull regardless of his experience. This is the first step in any proce of teaching. The difference between the lesson plan of the b ginning teacher and that of the veteran lies in the fact that t beginner's plan is more detailed and usually is written ou But all well-taught lessons are the result of planning.

Although the experienced teacher may change the details his plans as the lesson proceeds, the beginner cannot do so wit out running great risk of failure. He should make a plan car fully and follow it closely. As was said in a preceding less of this text, such a rigid following of the lesson plan will mal the first few lessons somewhat formal and stilted. However, will do much to assure correctness of procedure, which will followed by ease and grace of performance as experience gained.

The student teacher should study his plan with great care order that he may follow it with little effort during the cla period. If the plan can be typewritten it will be easier to rea and the process of following it will be much facilitated.

Other preparations than making a lesson plan. The student acher should make other preparations also. Since one's first y with a class does much to determine success or failure, one ould take such care in matters of dress, etc. as to feel entirely ease before the class. Even experienced teachers lose in ef- ctiveness of presentation at times when they feel that their ess and general appearance are bad. The beginning teacher nnot afford this handicap. He should, moreover, arrive early ough to have everything in order when the class arrives: e shades adjusted, the material devices at hand, etc. It is good plan to observe the pupils as they arrive, for this will rve to adjust the teacher to the situation before taking up e work.

Care to be taken during the first few days to build the proper lations between class and teacher. In regard to the matter of scipline it is well to avoid, if possible, the use of other than eneral devices at this time. The pupils are likely to take the titude of loyalty to the group, the teacher being an out- der. If, however, the teacher has observed in the room in hich he is to do his practice teaching, he is in less danger. he beginning teacher should assume all the seriousness of anner and dignity becoming his position, but should be care- l not to present the air of a challenger by fixing upon the rst sign of disorder as an opportunity to assert his author- y. He will do well to try to gain the good will and respect of is class by conducting the lesson effectively, making it inter- sting by good questioning, keeping trouble-makers busy, ignor- g trivial offenses, pausing momentarily for order, etc. But he student teacher may say, "Suppose a flagrant case of dis- rder should arise." Our answer is that such an event is not kely to happen unless the teacher violates the suggestions ade above. The pupils are forming their judgments of the ew teacher, and they will proceed with care. If he is able dur- g this period to build up a respectful attitude on the part of

the class, he can take care of the occasional offender w
security later, for he will have the good will of the majori
The teacher who enters the room for the first time oper
asserting that he will have order or know the reason why, cau
the pupils to take the "we-and-you" attitude and kills t
opportunity to create a feeling that will make good discipli
and teaching possible. The attitude of expecting order will
much toward obtaining it.

If the teacher has carried on his observation in the school
which he is to teach, he knows the customs of the school. It
well to be cautious about violating them at any time, especia
at the beginning. For example, the teacher may have attend
a high school in which the pupils have been spoken to
"Mister" and "Miss." Regardless of his own feelings on t
matter, when teaching in a school in which only the given nar
is used, he should use the pupils' first names. To do otherwi
causes unnecessary distraction and possibly makes the class fe
that he is queer.

Since the regular staff of the school appears older and mo
dignified than the student body, the student teacher, who
himself in school and more akin to the student body in age a
habits, must not make this fact too conspicuous. His dre
should be plain and his manners dignified. Such consideratio
are, of course, mere matters of common sense. But the b
ginning teacher has so many other things to consider th
he may overlook these if his attention is not specifically call
to them.

Teacher should anticipate teaching the lesson. Profess
Nutt recommends that, before going into the classroom, teache
visualize the process of teaching the lesson. This advice
especially good for beginners. Go through the lesson in imag
nation at least once, but preferably two or three times, anti
pating and adjusting the methods to the situation. This shou

done in one's room before an imaginary class. The questions ould be asked with the deliberation that one intends to use in e real situation. Time for replies should be given and answers ticipated.

SELECTED READINGS

LGROVE, C. P. The Teacher and the School, chap. iv, pp. 58–67, "The Student transformed into the Teacher"; chap. xviii, pp. 263–274, "The Teacher's Preparation of the Lesson." Charles Scribner's Sons, 1910.

HEA, M. V. Everyday Problems in Teaching, chap. ix, pp. 283–308, "Tendencies of Novices in Teaching." The Bobbs-Merrill Company, 1912.

LESSON XXXI

Aim *To avoid the classroom mistakes commonly made beginning teachers.*

Many shortcomings of beginning teachers traced to lack self-confidence. If we can do anything to overcome lack self-confidence we shall, at least to some extent, have prepar ourselves to teach. Confidence in ourselves begets others' co fidence in us, and, other things being equal, we learn best fro those in whom we have confidence. Let us then consider at th point means by which the student teacher may add to h self-confidence.

Our first suggestion is that he take mental note of his traini and experience and compare them with those of the avera pupil in the class. He has graduated from a good high scho which in itself indicates training superior to that of any memb of the class, even though the class is advanced. Along with th he has had additional academic training and also profession training. The self-conscious student teacher will find it helpf to take this honest inventory of himself at times when he fee timid about appearing before the class.

Timidity, which is a form of negative self-feeling, is a mi emotion. James and Lange give us a suggestion at this poi The emotion will not arise unless preceded by certain physic adjustments. The student teacher can do much to overcon timidity by taking the proper physical attitude. If he kee his eyes centered upon the floor and speaks with a falteri voice, he will tend to produce feeling-tones of a negative chara ter, that is, to produce a negative self-feeling. On the contra if he stands erect, looks the pupils in the eyes, and speaks in

ce mild but firm, he will tend to produce thereby feeling-
es of a positive character, that is, to produce a positive self-
ling. Of course the teacher must be modest, but there is a
ference between modesty and timidity.

Lack of knowledge is another potent cause for lack of self-
nfidence. Not only should the teacher be master of the
terial to be presented, but he should, at the same time, com-
ehend the material in its broader setting. This will give him
eserve for any possible emergency and hence give him a feel-
g of security. Not only should the teacher know his subject
its broader aspect, but he should be generally well read if he
to be at home before a class. A wide reading of a general
aracter will do much to take one's mind off the trivial, and
o off oneself, and to center it upon larger values. Hence one
tidote for timidity before a class is study.

Mistakes of student teacher traced to overconfidence. Al-
ough overconfidence is less common than lack of confidence,
casionally a student teacher's difficulties may be traced to it.
his is more likely to be true among students who have had a
ar or more of experience and have been pronounced successful
achers. Such teachers often teach well enough to "get by"
d yet teach far below their capacity. However, overconfi-
nce is not confined to those who have taught, but is some-
mes found among those who have never taught. The writer
calls the case of a student teacher who, upon being told that
e was failing to improve and that she should observe another
acher for a while, replied, "I don't think much of her as a
acher." The teacher whom she was told to observe was one
ith a long and successful experience, whereas the student
acher was teaching her first few lessons with all the failings
a beginner. Overconfidence gives the wrong attitude toward
nprovement and lessens the possibility of improvement. A
rtain amount of humility is not only becoming in the student
acher but necessary if he is ultimately to rise to his full

power. Hence each student should introspect for evidence overconfidence that he may eliminate the difficulty.

It will greatly help the student teacher who finds traces overconfidence, to sit down and reflect upon the situati Teaching is an art of the highest order; hence there is no li to one's improvement in it. Good teachers are those who ea learned this truth and lost no opportunity to obtain suggestio It is interesting at this point to note the extent to which successful merchant will go for suggestions in the matter advertising and salesmanship. He will read with avidity boo written upon the subject. He also will listen to the sugg tions of the most inexperienced clerk in his establishment. take any other attitude would preclude any possibility of risi to the rank of a Marshall Field or a John Wanamaker. The m chant, too, is practicing an art of the highest order. He rea his reward largely in dollars and cents; we, as teachers, in a b ter generation. But his task is as difficult as ours and deman a constant devotion to one thing, namely, self-improvement.

The self-satisfied or overconfident individual will often aided by observing the work of other teachers. No teacher least of all, the self-satisfied teacher—can afford to lose opportunity to observe good teaching. One who does not desi to observe others at work has ceased attempting improvemer and this condition will soon result in mediocrity at best. with the student teacher: to be satisfied with himself mea stagnation. Under such conditions the student teacher, n appreciating his needs, is sometimes not amenable to sugge tions from the supervisor. The observation of better wo by another is most likely to bring out one's own shortcoming Then, too, the student teacher who has clearly seen his ne is more likely to make a strong effort to overcome his faul He has at the same time noted the methods by which the o served teacher carried out the work. Hence it is recommend here that the student teacher, regardless of his success, vi

er classes. This, of course, should be done only after consul-
ion with the supervisor, who will select the class to be visited
l the hour. It should be noted at this point that the timid
cher also may derive confidence by the observation of others.
Difficulties of student teachers owing to failure to take active ps to meet situations. The teacher should be constantly tchful of those signs which tell of approaching difficulties. stitch in time saves nine" is as true in disciplining a school-
om as in practical affairs of everyday life. If the student
cher is fully confident that he can break up the difficulty
fore it goes too far, he should, of course, make every effort
do so. In any event the incident should be reported to
e supervisor as soon as it occurs. The student teacher, how-
er, must be careful not to mistake the momentary and un-
nned happening for that which is the result of maladjustment
d likely to lead to future trouble.

The following is a list of situation types which, if not success-
lly met by the student teacher, will cause trouble later:

Pupil causes of difficulty
a. Lack of promptness
b. Pupils' collecting in groups instead of going directly to their seats after entering the room
c. Pupils' reciting in a voice inaudible to the rest of the class
d. Excessive indulgence by pupils in trumped-up wit during the recitation period
e. Clownish acts
f. Short-circuiting of class activity. (Arguments across the aisle)
g. Throwing of chalk, paper, etc.

Teacher causes of difficulty
a. Nagging
b. Lack of humor
c. Indistinct enunciation
d. Poor teaching
e. Indiscreet familiarity with pupils
f. Failure to routinize work properly
g. Undue haste

Discussion of Pupil Causes of Difficulty

Lack of promptness. The morale of a class rapidly dete
rates under conditions favorable to lack of promptness, a
these conditions should be vigorously combated from the fi
One cause of lack of promptness on the part of the pupils
the lack of it on the part of the teacher. He should be in
room, if possible, before the pupils begin to enter. At least
should be there and should be ready to begin when the b
sounds. The teacher who comes rushing into the room late,
of breath, with, perhaps, books and papers in a disorgani
condition under one arm and other evidences of disorder,
done much to create a situation in which the pupils' attitu
toward promptness will be entirely negative.

The writer has found it valuable in developing promptn
to give short written exercises, in the nature of either check te
or discussion, beginning just as the bell rings and ending so so
that tardy pupils are severely penalized. This device serves
give the pupils the proper set for the lesson and at the same ti
causes the stragglers to realize that they have missed somethi
To stop work and wait until the tardy one is seated is a dev
used by some, but it has the disadvantage of being obvious
disciplinary and hence may create the ill will of the pupi
The former suggestion throws the entire burden upon the pup
who are late.

Then, too, the teacher can do much to develop promptness
the part of the pupils by not holding them after the signal f
dismissal has been given. The teacher whose lesson has be
properly planned and carried out should be ready to dism
with the signal or within a few seconds afterward.

As promptness is closely related to obedience, the degree
promptness with which the pupils respond to the teacher's r
quests is an important matter. In the first place, requests f
order should seldom be made, and almost never until the teach

s attempted other pedagogical devices such as asking thought-
ovoking questions of the trouble-maker, watching him closely,
. When a request is made, however, it should be made in a
ar, firm voice that, although in no way harsh or threatening,
ves no doubt in the pupil's mind as to the seriousness of the
cher.

Along with the question of promptness in entering the class
d responding to requests should be considered the question
promptness in preparing assigned work. The pupil who is
owed to build up the habit of putting off disagreeable tasks
til the last possible moment and then doing the work in great
ste or not at all is becoming decidedly unfitted for life. The
acher should be careful not to make impossible assignments
outside work. He should consider the students' program and
e school activity in order to determine the possibility of
complishing the assigned task. If, for example, he assigns
extra task for a night when the student is to rehearse for
debate, he thereby compels him to neglect the assignment
d lay the basis for future neglect. Then, too, assignments
ould be rather definite and not of unreasonable length. In
her words, it should be entirely possible for the pupil to pre-
re the work. With these considerations taken into account,
penalty should be attached to handing work in late. Excuses
ould seldom be accepted.

Pupils' collecting in groups instead of going directly to their ats after entering the room. A somewhat difficult situation ises when pupils collect in groups instead of going directly to eir seats after entering the room. In the first place, class work s not yet begun, and there would be no possible harm in the tivity were it not for the fact that there is likely to develop a uation in which the students will become slower and slower in sponding to the signal and hence cause the class to start off in rather unfavorable manner. The method of handling such a uation as this will of course differ with the age of the pupils.

With upper-elementary and high-school pupils it is best to ma a courteous request that they go immediately to their seats up entering the room, and give them the reason. If the teacl acts carefully, this method will seldom fail to produce results

Pupils' reciting in a voice inaudible to the rest of the cla The problem of getting pupils to speak plainly and distinc is often a difficult one. Pupils are often encouraged to spe indistinctly by sitting in a front seat and reciting only to t teacher. Such pupils should be called upon to face the cl when reciting. It is not enough to tell them to recite to the cl or to speak more distinctly. These results will come only wh the situation is right. If the pupil rises and faces the class l fore making his report or giving his discussion, he has an ince tive to speak so as to be fully understood. Suggestions can offered from time to time, such as "Enunciate more carefully "Raise the head," "Observe the expression on the faces of tho in the rear of the room," "Talk to those in the rear of the room Recitations of this kind will do much to keep the room in ord whereas short recitations mumbled to the teacher will tend cause the pupils to lose interest in the class work and to becor engaged in other interests.

Excessive indulgence in trumped-up wit during the recitati period. The ability to see the humorous side of life is a valuab asset to anyone and should not be discouraged. However, occ sionally one finds an individual who does not seem serious abo anything. He has perhaps been so encouraged in his witty r marks that he is continually searching for the incongruous. times when he meets with little success and his reputation as wit is at stake he increases his effort, with the result that h product is inferior and at times disgusting. Such a pupil is b ing spoiled for living and at the same time is distracting th class. In dealing with a case of this kind the teacher cann afford to indulge in such cutting remarks as "Now that will do or "That is enough from you." It is best to speak to the pup

ne after class and, if he is old enough to understand, point t the bad habit he is forming and also the fact that he is dis-bing the class. This should be done in a most kindly man-if bitterness is not to follow, for the pupil's pride will be ched. After speaking to the pupil privately, the teacher has med a basis of understanding, and it is only necessary to look arely at the pupil when he later attempts to indulge this akness. Let us repeat again at this point that there are casions when the genuinely witty remark occurs, and at such nes no harm can come from permitting teacher and pupils to joy it together.

Clownish acts. The "clown" is in the same class as the wit th respect to the nature and effect of his acts. However, it s been the writer's experience that his case is more difficult to ndle. The best method seems to be that of ignoring him henever he is engaged in attempting to attract attention. The acher often plays into his hand by scolding. A private talk th the individual may help.

Short-circuiting of class activity. By short-circuiting we ve reference to group discussions and interests outside those which the class as a whole is engaged. They may be broken by a series of well-chosen questions directed to the members the group that is causing the disturbance.

Throwing of chalk, paper, etc. The throwing of missiles out the schoolroom if not checked will result in the complete ndoing of the class. It usually does not occur until the class s reached the final stage of disorder. As in the case of all sturbances the teacher should not neglect the first instance of is offense but should attempt to stop it before it is carried too r. It should be noted that this is a disturbance for which the upil can find no excuse. The wit or the clown may or may ot directly have intended to disturb, but there is no doubt out the intentions of the pupil who throws missiles across e room. As in other cases of disorder the teacher will have

to study each situation. Suggestions can be made here o upon the most general principles. The act may have b committed by a timid pupil who wished only to attract a n neighbor's attention in order to ask a question about the less At the other extreme, the act may have been committed b habitual offender who has hurled a missile entirely across room for the purpose of attracting the entire class. The teac should not deal with the two cases in the same manner. In first case cited, it would probably be best to call the pupil one side after class and ask him kindly to refrain from throw things about the room. The teacher's voice should be ki accompanied, perhaps, by a smile of understanding. In second case cited, decided action should be taken by the teac then and there. A firm request should be made that the gr be not disturbed again by such procedure.

Discussion of Teacher Causes of Difficulty

Nagging. Nagging is a habit that teachers often acquire fr the following causes:

1. Failure to differentiate between motives.
2. Failure to differentiate between minor and major offens
3. An imperious attitude toward classroom discipline.
4. A fear of inability to discipline.

The beginning teacher, owing to his lack of experience, is a disadvantage in evaluating both the motives for breaches discipline and the effects. Hence each offense brings a respo from him; nothing is trivial enough to be overlooked. Of cou he cannot prepare an elaborate course of action suitable to ea offense. He finds that a well-directed rebuke leaves awe in wake and causes silence to reign. When the next trivial offe takes place he recalls the method which worked so well the fi time and repeats it, but with less effect. After a few repetitio

e pupils take on the condition that psychologists speak of as gative adaptation. They become accustomed to the situation d pay no attention to it. When the real issue comes, the cher finds that he has nothing in reserve and feels that he st make up for quality of disciplinary means by quantity. therefore continues using his former weapon—scolding. hen a teacher reaches this point he is totally unfitted for hoolroom discipline.

The beginning teacher is often incapacitated because of his itude toward the problem of discipline. The imperious man- r often assumed may be occasioned by a sense of inability to rform the task of governing the schoolroom. The teacher els that the least breach of order is a questioning of his thority and he reacts to it as to a personal affront. Under ese circumstances he reacts to even trivial offenses with de- ands that they be not repeated, thus laying the basis for gging.

Lack of humor. Many a perplexing situation will end all ght if the parties concerned are only able to see the humor- s side of it. There is after all much truth in the poet's words:

> Laugh and the world laughs with you,
> Weep and you weep alone.

his does not mean that the teacher should take nothing seri- usly, but rather that he should not magnify his troubles. hings are not so bad as they seem, and the great big world will ll on just the same. The teacher should learn, therefore, to tempt to see the humorous side of many unpleasant school- om experiences. It is the situation about which we lose our mpers that causes regret later. To see the humorous side of a tuation does not mean that one will do nothing about it. On e contrary, having laughed over the matter we are more likely deal with it objectively and to come out more successfully.

Indistinct enunciation. The teacher who cannot be heard d tinctly in all parts of the room encourages the attention of ma pupils to shift to other stimuli that are playing upon them mo effectively. The shifting of attention results in other intere and shortly in disturbances that make it more difficult for t teacher to be understood. The teacher in such instances likely to blame the pupils, thinking of them as indiffere whereas in reality the trouble goes back to his shortcoming the matter of distinct enunciation. He should remember at t point that more depends upon the way the word is said th upon the force with which it is said. To raise the pitch of t voice ruins discipline, as we have shown in an earlier less (see Lesson VII, p. 54). Improvement will come by raisi the head, looking squarely at the class, and carefully formi the syllables in the words. Besides, many talk too rapid thus running the words together. The teacher should gua against this fault also and, if he suspects it, deliberately attem to talk more slowly.

Poor teaching. Poor teaching is the greatest single cause poor discipline. Therefore the teacher with disciplinary pro lems should look first to his presentation of subject matter as source of difficulty. Is the work thoroughly planned? Is the a definite task to be accomplished at each period? Do t teacher and pupils accomplish task units at each period? there a sufficient testing of the results? Do the pupils kn the results of the tests? Are the pupils kept too long at given task? Is the presentation of the material psychologica These are questions which the teacher should ask himself locating sources of disciplinary difficulty.

O'Shea in discussing problems of school government writes follows:

> What, then, is the practical word for discipline? First of all, *Hold Attention of your Pupils*. The moment you lose their attention t energy will flow back into their muscles, and you cannot make a l

ich will prevent the inevitable "restlessness" which will follow. And w can you hold their attention? Mainly through the vigor, concrete-ss, and liveliness of your teaching. You never saw disorder in a room ere there was magnificent teaching going on. Conversely, you never w good order for any length of time where there was weak teaching. t this down as a primal law of good order.[1]

Indiscreet familiarity with pupils. Although the student acher is not likely to have much opportunity to become famil-r with the pupils, something should be said upon this point. o teacher is thoroughly trained who is not able so to direct s acquaintance with pupils as to exert his best influence upon em. The saying that familiarity breeds contempt, though ut a partial truth, offers much for consideration. The teacher ho cannot meet pupils in a dignified manner without becoming nnatural had better avoid such association, for a while at least, nd begin a study of himself. He should, if possible, observe ther teachers in their association with pupils. Regardless of a eacher's ability to associate effectively with pupils, no pupil hould be made to feel that he is entitled to any special con-deration or favors. It is in the carrying of intimacy to this oint that the greatest harm may be done.

Failure to routinize work properly. As was said several essons earlier in this text, there is a point beyond which routini-ation should not go (see page 62). The teacher will not go ar astray on this point if he keeps the purpose of routine in nind. Only those activities which facilitate the learning proc-ss should be routinized. However, one often finds routine be-oming an end in itself and getting in the way of learning. The ockstep used in some prisons is not exactly an end in itself, but t is not intended to prepare men to live in normal society. The rison may ignore normal life; but we, as teachers, cannot gnore the fact that we are preparing people for life outside he school by teaching them to live properly within it. On the

[1] M. V. O'Shea, Everyday Problems in Teaching, p. 5. The Bobbs-Merrill Company. Reprinted by permission.

other hand, all our institutions give vital evidence of the fa that men live most fully in the society that contains a certa amount of form. So within the schoolroom certain activiti should be formalized or routinized (whichever one chooses call it) from the start. Pupils should learn to stand in line a drinking-fountain or when purchasing tickets. In large class material should be passed out and collected according to a pla Pupils in large classes should stand and face the majority the class when giving a lengthy recitation. Such a formalizati of pupil activity has as its purpose the facilitation of the thoug processes and at the same time develops habits that are useful life. A certain amount of routine prevents confusion and has detrimental effects, since it is necessary in life after school als

Undue haste. The teacher who is ever in a state of nervou tension tends to produce a similiar reaction in the pupils. O who has visited many schools almost invariably can tell som thing of the nature of the principal by observing the children the corridors as he enters. One school may give an atmosphe of order and quietness; another, of confusion and excitemen The very activities of the pupils seem to be affected by th temperament of the principal. So with the classroom teache Excitement and undue haste on his part are paralleled in th pupils by nervous tension and outbursts of commotion. H room in this respect is likely to become a reflection of himsel The following are offered as suggestions to the teacher wh upon examination finds that his nervous tension leaves th pupils in a state of excitability:

1. Take plenty of sleep.
2. Take plenty of outdoor exercise.
3. Carefully regulate the diet.
4. Take on some avocational interest.
5. Outline the school work so as to leave time to drive home th important points.
6. Emphasize the needs of the pupil rather than the subject.
7. Read such books as will broaden your philosophy of educatio

Suggestions 5, 6, and 7 should perhaps receive some discus-
n. The teacher is often rushed in his work because he is
ing to do everything. Most books cannot be covered thor-
ghly at all points in the time allotted if one is to keep the
ll-being of the pupils uppermost in mind. It is necessary so
organize the work that plenty of time can be given to those
ases of it which are really vital to the growth of the pupils.
done early in the semester and put into the form of a rather
xible schedule, such organization will prevent many daily
rries as to the progress of the class.

Keeping uppermost in mind the pupils' needs in terms of
e ends of education has the salutary effect of stabilizing the
acher's activities. It gives him a criterion for determining the
nount of time that should be allotted to a given topic and a
eling that something has been accomplished at the end of a
ven period. It takes the humdrum and daily grind out of the
acher's life and leaves in its place the pleasure of creating.
nder such conditions the teacher is not so easily annoyed, and
rvous haste gives way to patient thoroughness. We would
escribe for this situation the taking of a philosophical attitude
ward one's work and life in general. By this we do not mean
indifferent attitude toward what is going on, but rather a
nilosophy that will orient one's activities and prevent the
orry and useless mobility which come from not having guiding
rinciples that center one's attention upon the really important
ccomplishments.

A few suggestions are in order here by way of supplying the
eginning teacher with the proper attitude and the necessary
nspiration. The student teacher will draw much of his needed
nspiration from the classroom, and he should, at the same time,
e laying the foundations for its continuance in his professional
fe after formal training days are over. He should familiarize
imself with educational literature and should read at least one
echnical and one philosophical journal. He should miss no

opportunity to hear lectures given by experts in the field of ed
cation. Along with this he should be constantly on the look
for such books as give meaning to the teacher's life and activi
The writer would recommend at this point *Talks to Teache*
by William James.

SELECTED READINGS

O'SHEA, M. V. Everyday Problems in Teaching, chap. ix, pp. 283–308, "Te
encies of Novices in Teaching." The Bobbs-Merrill Company, 1912.

LESSON XXXII

n. To enable the student teacher to profit most fully from conferences with the supervisor.

After each lesson the student teacher should prepare an esti-
ate of his work. Having taught the class, the student teacher
his earliest convenience should write out an estimate of the
ork, making note of points at which he failed and succeeded.
e should describe the situations at these points, and account,
possible, for the success or failure. The student teacher will
ofit by this practice exactly in proportion to his efforts. Pro-
ssor S. S. Colvin[1] says:

Some content themselves with perfunctory and brief statements,
ch as: "Today's lesson went well on the whole. I had little trouble
th attention or discipline." Other teachers write out in considerable
tail what they consider was the outcome of the lesson, giving an
teresting and intelligent analysis of the successes and failures, of the
lative value of various parts of the lesson, and a brief critique of
eir aims and method. The following is an example:

"I feel that today's lesson went better than any I have so far con-
cted. In the first place, the class was interested and alert. The
ason for this attitude was, I am sure, that I tried to bring the discus-
on home to them, to relate it to their own experience and to the things
at most concern them. I am going to try to do this each day from
w on. However, I must guard against two things. First, I must
ep more to the subject, and not allow the class to wander far afield,
owever interesting the excursions may be. In one instance, I started
discuss agrarian troubles in Italy and ended with the relation of high

[1] "The Lesson Plan and its Value to the Student-Teacher," in The Eighteenth Yearbook of the National Society for the Study of Education, p. 208. Public School Publishing Company, Bloomington, Illinois. Reprinted by permission.

prices to the present gold supply. Secondly, I must prevent the in vidual members of the class from breaking in with comments and qu tions. Their interest prompts them to do it, but it creates a certa disorder that may affect the discipline. I had a feeling today that, if I a not careful about this, I may soon have a disorderly class on my han

"In today's lesson I spent too much time on the advance and I h only five minutes for the assignment of tomorrow's work. I had plann for ten minutes, and I could have used even more to advantage. think most of my questions were good, but too many were leading que tions and involved little thought on the part of those who answer them. My illustrations 'went.' The class in every instance saw t point and were interested. I shall spend a good deal of time in t future in planning my illustrations. I wish I had better maps for pa of this work, but I find I can get on by drawing rough outline ma on the board, and having the pupils fill in important details as th arise in the course of the recitation. I have not as yet overcome entire the fault of asking questions twice or three times, or of repeating t answers of the pupils, but I am sure I am improving in this respect

The above commentary is only suggestive of the type of r view which the student teacher should make of each lesso taught. The review should deal particularly with points su gested by the supervisor.

The report should not be a mere summary of the happenin during the class period but should indicate thinking by givi remedial suggestions. The student teacher should make such daily report of his progress to the supervisor unless otherwi requested. This will better enable the supervisor to help hi

Preparation for conferences with supervisor. The stude teacher will have conferences from time to time with the supe visor. These are precious moments and should be prepared f with care. If the student has prepared commentaries on ea lesson taught, they will form a basis for a profitable conferenc The student undoubtedly will have thought of several questio which he desires to have answered. These should be writte down and brought to the conference. In this way one preven the danger of forgetting them and also saves much time tryi

recall the desired points. It is well to state in this connection at much valuable conference time is lost by the failure of udent teachers to arrive at the moment set. The student who mes to the conference late either causes the supervisor to ex- nd his period over into that of some other student or loses the nount of time by which he was late. Moreover, promptness a very desirable habit in a classroom teacher, and students ould consider it an important part of their course of training.

Right attitude of student teacher necessary for successful nferences and eventually the most successful teaching. No nference will be a maximum success to which the student acher has come with anything uppermost but the desire to prove. Students often come to the conferences in attitudes at make help all but impossible. To the extent that the udent is really desirous of improving will he be amenable to nstructive criticism. Nothing matters to him in the long run cept improvement in his teaching ability. For this he is will- g to sacrifice any petty personal vanity regarding his present bility. Perhaps the thing that we are trying to say here can be id better through an illustration. The writer had had three ears of experience as a teacher before taking practice teaching. e had been called a good teacher by a few who were inexpert judging. The result was that he came to the practice with the rong attitude. It was a formal requirement that had to be et. Consequently he carried over into the early part of his ractice teaching the bad technique which he had developed. is questions were mere fact questions. The supervisor, who as a highly trained Columbia graduate, remonstrated, but the riter did not understand and, furthermore, scarcely wished to nderstand. His success as a teacher had been questioned, and s desire to improve was not strong because he did not realize ow much improvement was necessary. Thanks to her patience, Miss XXX finally solved the problem of giving the writer the roper attitude, and this resulted in almost immediate im-

provement. Don't miss the moral. No progress can be ma
until the desire to improve predominates.

It is almost impossible upon looking back to understand h
such an attitude could possibly arise. The most skilled teach
welcome conferences at which suggestions for improveme
may be obtained. The experienced and skillful teachers ha
developed attitudes that the student teacher needs.

Utilization of conference suggestions. If the conference h
been prepared for with care, that is, if the student has co
with the proper attitude and a few well-organized questio
relative to his classroom problems, he has, no doubt, receiv
suggestions which, if properly utilized, will greatly improve h
teaching. But they must be taken seriously, and every effo
must be made to apply them. It may be, either because t
student has not effectively described the situation or becau
his personality is a large factor in it, that the supervisor c
give only the most general suggestions. The student must nev
overlook the fact that a device which will succeed at one ti
may fail at another, and also that a device which can be ef
ciently utilized by one person will fail when tried by anoth
For this reason, imitation may be dangerous if applied witho
consideration on the part of the user. Likewise, inflexible mod
of procedure are not desirable. The situation which will ari
tomorrow will not be an exact duplicate of any which has aris
before or of any which will follow. There will be, of cours
many similar elements, but some will differ both in amount a
in quality, forming a total situation of a complexion that w
differ from any previous or future one—hence the futility of gi
ing or attempting to follow inflexible modes of procedure. If t
supervisor can detect the violation of an established princip
of the art of teaching, he may point out the principle and off
suggestions relative to improvement. To give or to attempt
follow hard and fast lines of procedure is neither most helpf
to the student nor likely to remedy the immediate situation.

Complexity of teaching process makes rule-of-thumb procedure ineffectual. It is possible to raise the process of teaching to the level of an art only because the complexity of its situations and the corresponding variability of its procedure make rule-of-thumb methods inadequate. The mason may, within large limits of safety, prepare his mortar with almost no variance of procedure, and hence he may safely follow a rule. His work is on the level of the artisan. Not so with the one who would give expression to canvas. His work is on the plane of the artist, and within the bounds of guiding principles he must ever vary his procedure. At all times his ability is tested to the utmost. Each situation is a new one not only to him but to the world. It never appeared in just that form before, and hence no prescribed formula may ever be followed in detail. The teacher's work corresponds closely to that of the artist. If anything, he must work with situations more complex and variable and always under the strain of realizing that failure means the loss not alone of time and effort but of human possibilities as well.

Student teacher becomes stronger only when suggestions are thoughtfully applied. Since the finished teacher is not an artisan but an artist, the student must seek power in sizing up situations and skill in dealing with them. He must not expect to be guided to certain success by the suggestions of the supervisor. Were such possible, it would only provide for the immediate situation and not prepare the student for new situations to follow. Each suggestion of the supervisor should be carefully thought over in the light of what the student knows about the principles of teaching. He should in the same way study his successes and failures. Merely to be satisfied to recognize one's success or failure and accept what help can be had from the supervisor will not suffice. There must be a determination to improve one's teaching power, which results in thoughtful effort. There is no royal road to teaching.

PART IV

INTRODUCTION

The student will discover as he enters the task of teachi that the principles of psychology and pedagogy take on a ne significance for him. In his earlier professional courses he h read with a view to use of the material at some future time possibly with a view to credit only. The situation is entire different now. The student is face to face with problems whi are very real and which must be solved. This will tend to gi him an active rather than a passive attitude toward the theo which he has studied previously. He will need not only to r fresh his mind on the principles of psychology and pedagog which have a bearing upon each problem as it arises but also master them so that he may apply them. He should have few well-selected books at his command. At the end of ea lesson will be found such a list with reference to the top under consideration. The reading of the text along with su of the selected readings as time permits should greatly he the student teacher in solving such problems as arise in t classroom.

Part IV will serve to guide the student through the period actual instruction. It is, of course, impossible to arrange t lessons to conform at all times to the order of attack in t classroom. Hence it will be necessary to adjust to the classroo instruction the order of reading Part IV. With such an adjus ment it is possible to parallel the classroom activity at all tim with reading which has a direct bearing upon the problem und consideration.

LESSON XXXIII

m. *To become able to reduce the size of the lesson plan effectively as experience is obtained.*

It is the purpose of the longer lesson plan to cause the student acher to work out the lesson procedure in every detail. These ans, if closely followed, will assure him of laying the proper aching patterns. After a few lessons have been taught with rrect form, even though somewhat mechanically, the teacher ay, with the advice and consent of the supervisor, reduce ma-rially the size of the lesson plan. The writer would recom-end that this be done after teaching from three to five lessons, epending upon the success of the teaching. These reduced ans should be used for about ten lessons, when, if the teaching of average success, further reduction of the plan may be ade.

Unless the supervisor wishes to inspect the plans before or fter teaching, it will not be necessary to place at the top of nally reduced plans the subject, room, date, and hour. The eacher now may drop also a statement of the remote aims, the ssignment aims, and the general physical devices. Procedure eed no longer be stated in complete detail. A few big topical uestions should be written out at intervals sufficient to hold he teacher to the subject. Subject matter and method should ot be divided now. Likewise, a formal division of the plan nto introduction, lesson body, and assignment need not be made nless advised by the supervisor. More freedom of activity will e allowed at this stage of the student teaching. The teacher will be given an opportunity to learn to carry out the details of a teaching exercise with the aid of a general plan only.

The following are sample lesson plans suitable for the seco stage of student teaching:

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Reading 1B (First Period)

1. Aim: To enable the pupils to read the story of "The Th Bears"
2. Device: Have written on the board, "Great Big Bear," "Midd sized Bear," and "Little Wee Bear"
3. Procedure
   a. Develop interest in the lesson by such questions as
      (1) Would you like to have a new book this morning?
      (2) What do you find on the first page of our new book?
   b. Have pupils find words on the board to correspond to t pictures
   c. Teacher and pupils read in unison, then call upon certain in vidual pupils to read. When the pupil is through, ask su questions upon the reading as "What did Goldilocks when she went to the door?"
   d. Develop interest in the further reading of the story by su comments as "Next we shall see what happened to Gol locks when she went in"

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Arithmetic
(Continuation-School Boys, Fifth Period)

1. Aim: To give the students a working knowledge of the arit metical processes involved in running a "Coney Island" star
2. Procedure
   a. Brief discussion of the things to be seen at the Lake Coun fair, particularly a "Coney Island" stand

. Develop through discussion an idea of the steps necessary to secure permission to erect stand
. Use questions to develop an understanding of the cost of such articles as tent, stove, cooking-equipment
. Develop by lecture and questions an understanding of foods that will be necessary, also their price and quality
. Consider the necessity of help and the cost of help
. Give number of people likely to be served each day of the fair
. Compute expenses, receipts, and profits
. Make comparisons of results and locate errors
. Assign lesson for the following week on the meaning of a 5 per cent or a 15 per cent raise in the pay of one's father

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: English Literature 11B (Fourth Period)

Aim: To reveal and give an appreciation of the personality of Samuel Johnson

Devices: Pictures of Johnson

Procedure

a. Summarize the previous lesson (Addison and Steele) by means of questions and discussion

b. Account for the statement that Johnson's personality is greater than his literature

c. Analyze with the class Johnson's personality, to discover the qualities that made him great: Relate instances and facts in the life of Johnson (such as his helping Goldsmith and his keeping in his home many queer old people who often complained of their host), and let pupils discover his great qualities

d. Use pictures to develop an idea of Johnson's appearance

e. With aid of pupils draw conclusion as to the validity of the statement that Johnson's personality is greater than his work

Assignment

a. In making new assignment first orient the pupils by naming the age that we are studying and by giving its characteristics

b. Point out possibility of trouble in classifying the work Goldsmith

c. Problem: Try to discover why Goldsmith is included in chapter on Johnson, Boswell, Burke, and Gibbon

d. Develop interest in Burke by identifying him with the American Revolution and the beginnings of the British domination of India

STUDENT TEACHER: XXX

SCHOOL: XXX

CLASS: Botany 9A (Third Period)

ANALYSIS AND METHOD OF ATTACK ON LESSON

1. "True-false" test
   a. In most seed plants the chlorophyll-bearing cells are found chiefly in the leaves
   b. Sugar is always used by the plant as soon as formed
   c. Change of sugar into starch is not brought about by chlorophyll
   d. Stored food is found only in the seeds of plants
   e. During respiration plants take in oxygen and give off carbon dioxide
   f. In the production of carbohydrates carbon dioxide is taken from the air and oxygen is given off
   g. During a bright day green plants take in more oxygen than they give off
   h. Leaves are chiefly the parts of the plant from which water is lost by evaporation
   i. On hot days the evaporation of water from leaves helps to cool them
   j. Air pores on the surface of leaves have nothing to do with evaporation
2. Discussion of answers to test questions
3. Lesson proper
   a. Transpiration
      (1) Define

(2) Discuss
(3) Compare with animals
. Photosynthesis
(1) Define
(2) Discuss
(3) Compare with a factory
(4) Significance for animal life
ssignment
. Pages 248–250
. Respiration
. Comparison with animals
. Method of keeping proportion of oxygen and carbon dioxide constant
aboratory work
. Cross section of leaf studied with aid of microscopes. The pupils are to draw and label the following parts (p. 139 of manual):
(1) Upper epidermis
(2) Palisade cells
(3) Spongy mesophyll
(4) Air spaces
(5) Veins
(6) Stoma
(7) Lower epidermis
. Enlarge drawing of stoma, labeling the following:
(1) Guard cells
(2) Opening

After the student teacher has taught about fifteen lessons, he ould begin using the type of lesson plan that he will be likely use as a regular teacher in the service. Since he probably will t put his name on the plan or state even his immediate aim in ery lesson, he may well be excused from such requirements w. The plan commonly used by good teachers consists of a w notes only—just enough to orient the teacher at the begin- ng of the class and hold him to the subject. The steps will t always consist of full sentences. A word or a phrase will rve at times to give the idea needed. Such a plan will be of

use only to the teacher who made it. It will require more eff and skill to teach a good lesson from such a plan than it w from one worked out in fuller detail. However, since one p pose of the course is to enable the student teacher to tea effectively from such plans as teachers in the service usua make, he must gradually adjust himself to the shorter plan wi out lowering the quality of his teaching. In fact, the stude teacher is expected actually to improve his teaching while ducing the size of his plans. It should be remembered at t point that the reduction of the size of the plan need not nec sarily reduce the amount of lesson preparation. Each less must be thought through carefully before meeting the cla The teacher who may be expected to make good in the servi will be of the type that will work harder on the last day's less than on the first one.

The following plans represent the few notes which successf teachers in service find it necessary to make:

ALGEBRA 9B

Sum up previous lessons by calling for the definition and ru that were developed.

Have the pupils exchange and grade papers.

Develop rules for squaring and cubing monomials.

Assignment: (1) Develop an understanding of the process extracting the square root of a monomial that is a perfect squar (2) under Exercise 52 write out answers to problems 1 to 25.

BOTANY 10A

1. Give "true-false" test
   a. In most seed plants the chlorophyll-bearing cells are fou chiefly in the leaves
   b. Sugar is always used by the plant as soon as formed
   c. Change of sugar into starch is not brought about by t chlorophyll

d. Stored food is found only in the seeds of plants
e. During respiration plants take in oxygen and give off carbon dioxide
f. In the production of carbohydrates carbon dioxide is taken from the air and oxygen is given off
g. During a bright day green plants take in more oxygen than they give off
h. Leaves are chiefly the parts of the plant from which water is lost by evaporation
i. On hot days the evaporation of water from leaves helps to cool them
j. Air pores on the surface of leaves have nothing to do with evaporation

Transpiration
Photosynthesis
Assignment: Pages 248–250—respiration
Take up laboratory work on cross section of leaf

ARITHMETIC

1. Introduction. (Continuation-School Boys.)
2. Permission for stand and cost of its equipment.
3. Prices and quality of food.
4. Cost of helpers.
5. Number served.
6. Compute expenses, receipts, and profit.

LESSON XXXIV

Aim. *To understand the characteristics of the drill meth and to become skillful in conducting this type of clas room exercise.*

Correct form should precede practice. To understand t full significance of the statement that the correct form shou precede practice it may be necessary for the student to revie his elementary psychology. Let us go back for a moment to t neural basis of habit formation by studying the followi diagram.

Suppose an impulse to be traveling along the neurone *A*. L us suppose that the impulse was set off by hearing "9 × 8." L us again suppose that it is necessary for the impulse to trav over the neurone *C* through the synapse *E* if the correct r sponse 72 is to result. Let us further suppose that for som reason the first impulse passes through the synapse *D* and ov the neurone *B*, resulting in the response 54. The question point is, Just what effect has this initial wrong response upo subsequent responses? To answer we must return to the law of the synapse, one of which says in effect, Each passage of a impulse over a synapse tends to break down the synapse so tha subsequent impulses more readily pass. This will mean tha having once made the response 54, the same response is mor likely to follow the stimulus 9 × 8 in the future. The mor frequent the response 54 results the more difficulty will be en countered in attempting to cause the energy to pass over th synapse *E* and the neurone *C*, resulting in the correct respons 72. Hence the importance of preceding practice with the co rect forms.

Drills should aim to automatize. If drills have been preceded
the correct forms, they have served to break down only the
napses which it is desirable to break down; that is, they have
t served to break down synapses which lead to the wrong
sponse. They have further served to break down only the
napses that must be broken down. A chain of synapses and
urones may lead to the correct response by a route other than
e most direct. If, for example, in teaching a child to add
and 4, I permit him to go through the process of breaking the
into equal parts and adding them individually to 3, resulting

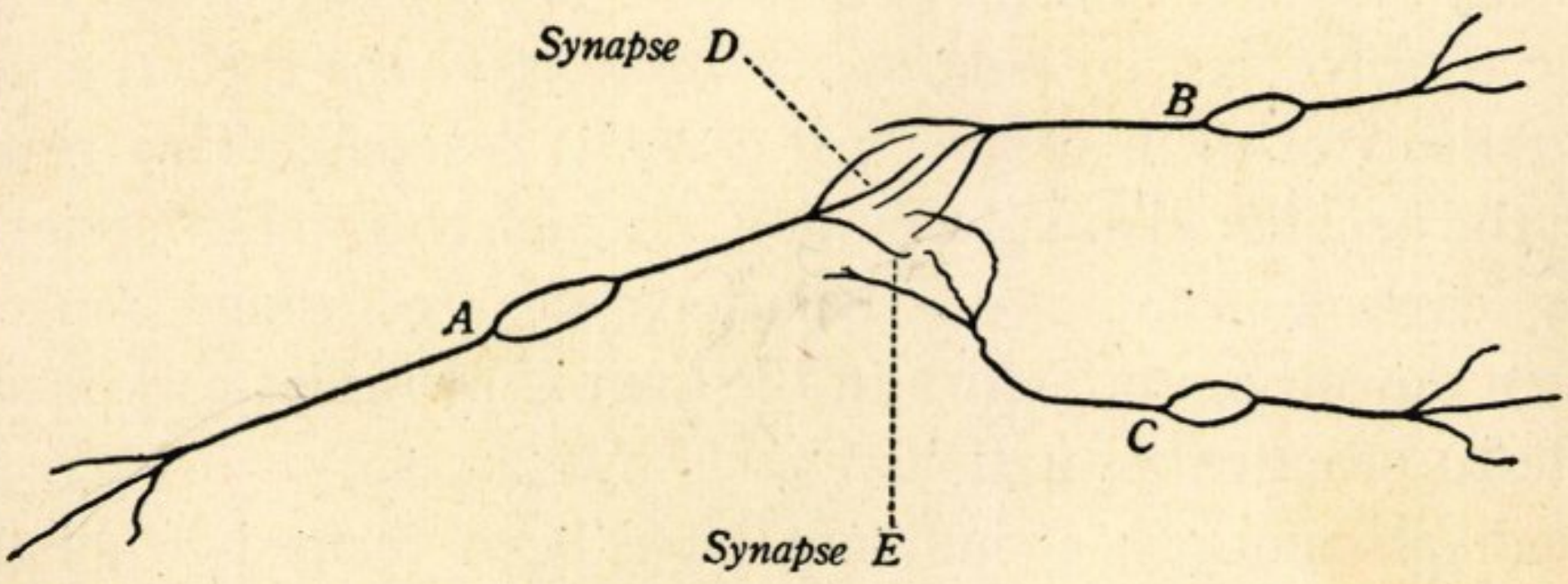


FIG. 34. Diagram of Neural Paths and Synaptic Connections

$3 + 2 = 5$ and $5 + 2 = 7$, I have permitted him to develop
rcuitous paths of neural discharge and hence greatly increased
s chances of giving the wrong response. The possibilities of
oth accuracy and automatization have been lessened.

Speed of response desirable as an aid to automatization. The
ow response provides opportunity for the development or
ontinuation of nonessential synaptic connections. Hence drills
hould be rapid, the teacher demanding an immediate and
orrect response to the stimulus.

**Drills should be so conducted that all members of the class
espond to each stimulus.** Imagine the waste of time in a class
f twenty pupils if the teacher so conducts the drill that the
nly one benefiting is the one responding. This condition will
btain unless the teacher makes a conscious effort to avert it.

If the stimulus is given to the class as a whole and a memb is called upon immediately for a response, all have the adva tage of the drill. Teachers often make the mistake, howev of announcing before giving the stimulus the student to called upon. Such a situation means time out for the majori of the class.

Stimuli and responses must not become chainlike unless su sequential responses are desirable in the future. An individu may know the nines so as to begin with 9×1 and continue wi no apparent effort to and including 9×12 and yet, if asked respond to 9×8, find himself unable to respond without fir going to a recognized part of the nines, perhaps the very firs and repeating all in order until 9×8 is reached. This resul from the peculiar chain association in which the nines were orig nally learned. Chainlike associations, if once formed, must b broken down before facility in the use of the tables can be ad quate to practical situations.

Such associations should not have been formed originall Each stimulus and response in the case of the multiplicatio tables should be effectively connected through drill, but shou be completely independent of any other stimulus and respons That is, $9 \times 8 = 72$ should be no more tied up with $9 \times 7 = 6$ than $9 \times 8 = 72$ is tied up with $3 \times 4 = 12$. There should b complete independence of such stimulus-response situations.

The development of stimulus-response patterns of the in tellectual type a part of the field of habit formation in genera The learning of the multiplication tables, the memorizing of poem, and the learning to release the clutch of an automobi before using the brake are all forms of habit formation an depend upon the laws of exercise and effect. Synaptic resis ances must be lowered and increased in each instance. In oth words, the laws of habit formation are applicable to all. Th full recognition of this fact is necessary for the proper unde standing of drill rules.

Memorizing poetry or prose form of drill. The difference tween the memorizing of poetry or prose and the learning of e multiplication tables so that instant response follows a ven stimulus lies in the fact that the former consists of estab- shing a chain of connected responses of such a nature that sponse No. 1 becomes in turn the stimulus which brings re- onse No. 2. The learning of poetry or prose is then a mat- r of breaking down synaptic connections in such an order that e desired responses follow in correct succession and without pparent effort. To obtain this result with the least effort it is ecessary to give pupils directions for study and encourage em to carry out these directions.

Pupils should memorize by wholes rather than parts. Experi- ental evidence relative to the comparative merits of whole and art learning is not yet as conclusive as it might be, but we ave much to support the belief that the advantages favor the hole method of learning. Starch discusses the question as llows:

In committing material to memory, learn by wholes rather than by arts. Poetry or prose can, as a rule, be memorized more quickly if the aterial is read through as a whole from beginning to end than if it is emorized in small sections of two or three lines; and what is more nportant, when this method is employed, the retention is more per- anent. With many persons who are accustomed to memorizing by the art method, there is frequently no saving of time in the first learning artly because the whole method is new to them and partly because the earner often doubts the advisability of using the whole method.

There are three reasons why the whole method proves in the long run o be more economical: (1) Learning by parts establishes many useless nd interfering connections. Thus in committing the first two lines of a oem the association is established between the last word of the second ne and the first word of the first line. But this is not the order in which he lines are to be recalled. Rather the connection should be established etween the last word of the second line and the first word of the third ine as is done in the whole method. Consequently every portion memo- ized by itself forms at least one detrimental connection and in a long

selection a very considerable number of such associations are forme These derailing paths probably account for the fact that pupils in r citing a poem become stalled usually between the portions learned piec meal. (2) Reading the material over as a whole gives a view of th entire selection and will serve to give meaning and correlation of th parts in the whole. It will help to organize the ideas as a whol (3) Learning by parts is apt to produce great unevenness among th various portions of the material in the degree of perfection of the mem rizing. Some parts, especially the early ones, will be repeated needless a great many times and result in much greater over-learning of thos parts than of other parts. One point of caution in using the who method should, however, be noted. When the learner reads over th entire selection to be memorized he does not make much visible progre until, after a sufficient number of repetitions, he is able to reproduc most of the material. This situation is likely to be discouraging, particu larly to children. Perhaps the most effective manner of employing th whole method is to learn the material in relatively large sections instea of as a complete whole, particularly if the selection is very long.[1]

Parker uses the following illustration to show one advantag of whole over part learning:

STANZA A

1. Mary had a little lamb;
2. Its fleece was white as snow;
3. And everywhere that Mary went
4. The lamb was sure to go.

STANZA B

1. It followed her to school one day,
2. Which was against the rule;
3. It made the children laugh and play
4. To see a lamb at school.

The connections made by the whole and part methods may be repre sented by the diagrams on page 319.

[1] Daniel Starch, Educational Psychology, pp. 185–186. Tne Macmillan Company. Reprinted by permission.

In the *whole* method the arrows indicate that the end of each line comes associated with the beginning of the next, which is as it should be. In the *part* method, by which stanza A is repeated by itself until memorized, the last arrow indicates that the end of line 4 of stanza A comes associated with the beginning of line 1 of the same stanza. This is an association that we do not care to build up. Hence time is wasted in building up an association which we do not want, and which, later on, will interfere with the association that we do want, namely, of the end of line 4 of stanza A with the beginning of line 1 of stanza B.[1]

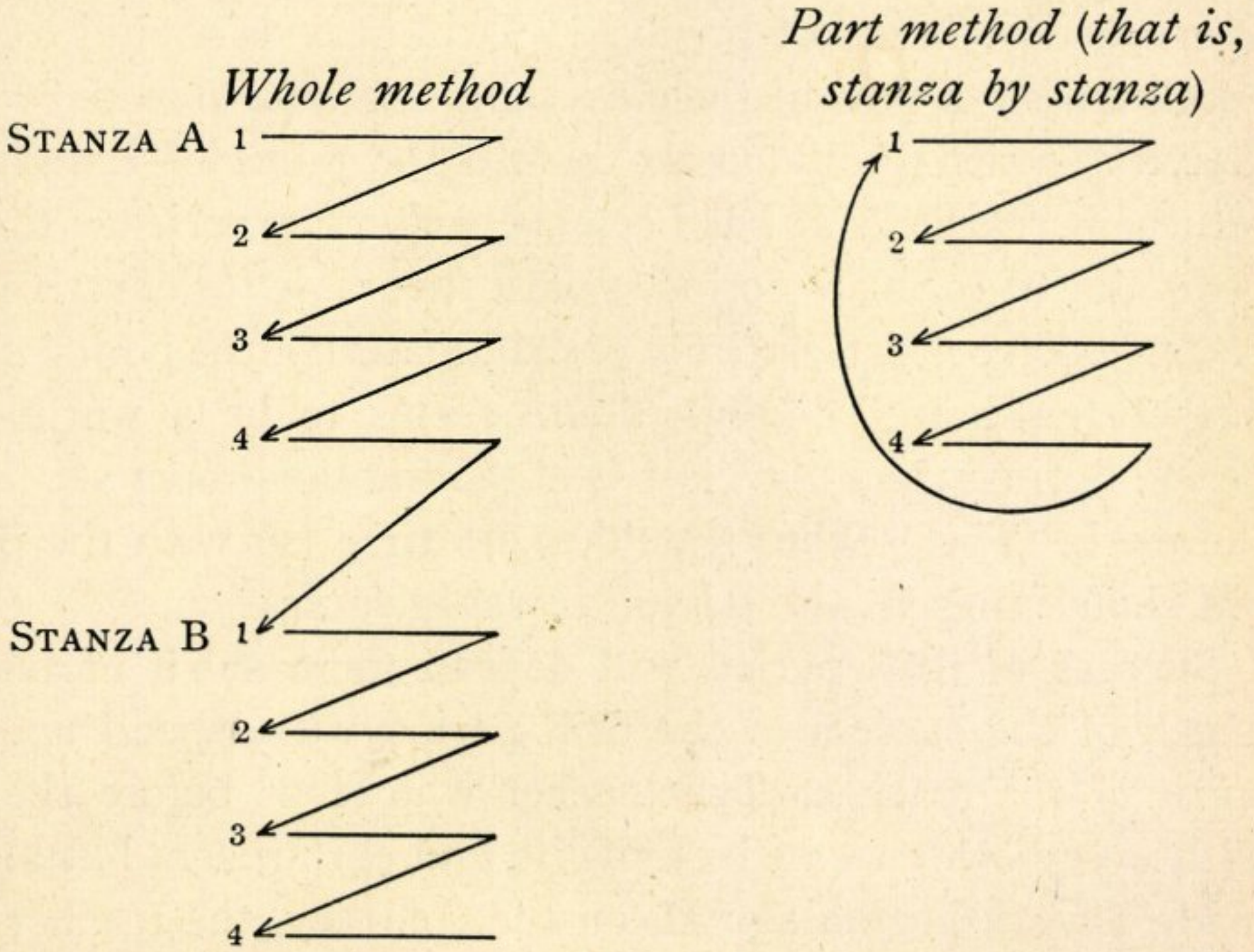


FIG. 35. Illustrating an Advantage of Whole Learning over Part Learning (After S. C. Parker)

Drill periods should be spaced properly. The interval between drill periods is an important matter for consideration. It is better so to divide the time given to drill that several short relatively drill sessions are held than to use up all the time in one prolonged session. For example, if I have fifty minutes to give to learning a few stanzas of poetry, it is more effective to divide the time, say ten minutes each day for five days, than to sit

[1] S. C. Parker, Methods of Teaching in High Schools, pp. 157–158. Ginn and Company.

down and attempt to learn all the stanzas during one continuo session. Of course, the reader will recognize that there is end to the distributions of time that could be made, and at t present time educational experimentation would not justify a set rule on the matter. Hence one may make the recommend tion in a most general way only.

Drill period must be neither too short nor too long. It easily possible to prolong drill beyond the point at which r turns justify the effort involved. Drill periods should be sho and intense. A part of the class period may be devoted to dr activity, which should cease before the point of diminishi returns is reached. It has been the writer's experience that t beginning of the class period is most favorable for effective dri If the lesson consists entirely of drill material, the period shou be shortened accordingly. There seems to be a warming-u period during which the class is obtaining the proper set towa the work. The teacher should at no time lag with the pupi but should present the stimuli in rapid succession.

Success of drill period will depend upon spirit of teache Much of the success of the drill period will depend upon t spirit of the teacher. The teacher who steps before the cla with every evidence of lack of life and enthusiasm has alread made a weak beginning. If, on the contrary, the teacher ste briskly to his task, remains standing rather than seated, and every way takes an aggressive attitude toward his work, t class is much more likely to respond in a desirable manner.

Drills should be properly motivated. If the drill period is be most effective, the pupils must have a motive other than th of pleasing the teacher or merely taking part because that is t expected thing to do. If, for example, the pupils discover their activity that they are checked because they lack respons which should be automatic, they are more likely to take a interest in the necessary drill. Boys drill with prolonged inte est and effort upon football signals. Machine-like response

e signals is necessary if the teamwork is to be effective. The oblem is their problem; it is identified with their aims and in- rests, and hence the necessary drill will be entered into with the vim they can command. It is not to be inferred here at the writer believes that all school drill can be given as ealistic a setting as that which takes place on the athletic ld. However, to the extent that such conditions do exist, to at extent is motivation all that it should be for effective drill. here are times when stern necessity must take a hand, and otives not generally recommended here must be used. These mes, however, should be looked upon by the teacher as evi- nce of his failure so to direct the pupils' interests as to lead ost expeditiously to desirable outcomes. Unmotivated drill ay be partially excused on the ground that it is forming a ecessary preparation for properly motivated work later.

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LESSON XXXV

Aim. *To understand the characteristics of the developmen method and to become skillful in conducting this type classroom exercise.*

The development method of instruction may be divide roughly into two classes, namely, conversational and lectur the former being the more suited to pupils in the grades and i high school. The purpose of the developmental approach is t organize the pupil's background of experience in such a manne that he is led to the new problem in the best possible way. I doing this the teacher may use a series of well-directed ques tions, responses to which aid the pupils in organization; he ma lecture, or he may use a combination of questions and lecture It has been the writer's experience that the latter method i generally the most effective.

All new ideas must be the result of development. Regardles of the intellectual devices that teachers employ, there is but on method by which new ideas are obtained, and that is the de velopmental method. We pass to the unknown by means of th known; that is, the new ideas take their rise from the old ones So-called methods of teaching (intellectual devices) are bu means of facilitating this process. Every new idea must o necessity grow out of the pupil's background of experience There is no other possible source. The teacher who forgets thi truth is almost sure to be guilty, sooner or later, of giving pupil words and formulas without corresponding ideas. Although i may be necessary for the teacher, through proper use of the lec ture method, to organize this background of experience wit respect to new ideas that lie just outside the pupil's know

orld, these new ideas can be assimilated only through the ychic processes of the pupils themselves.

Developmental attack either inductive or deductive. In say- g that the developmental attack may be inductive or deduc- ve we mean that the teacher may begin with a stated principle d develop its verification, which is deductive; or he may begin th specific instances and develop a general rule. The latter is e inductive approach. The point, however, which makes the ethod developmental is the fact that instead of dogmatically forming the pupils of a given truth the teacher leads to its tablishment step by step. With the aid of the teacher the upil has made a bridge from the known to the previously nknown, which now becomes a part of his world of knowledge. erhaps he may have vaguely sensed the truth before; but not ntil his experience was properly marshaled and directed was he new truth in reality his. This expansion of our world of leas must always come about through the process of growth, hich means only the working over and relating of ideas al- eady at hand. Whether we boldly expand the pupil's world of leas at any given point and firmly establish this new boundary ne between his known and unknown world by bridging back the known through justifiable contacts (deductive method), or arshal several ideas of his known world at one point and sud- enly burst the boundaries of previous knowledge so as to include new truth (inductive method), we are developing new ideas.

Teacher likely to lose contact with pupils in lecture method f development. A common fault of beginning teachers is that f assuming that pupils are following the lecture. One moves nto the new field with such satisfying grace when unhampered y plodding learners that even those experienced in the art of eaching are tempted at times to lecture, letting those follow ho are able. This is more likely to be true in the case of sub- ect specialists who, though interested in pupil development, ave at the same time a strong interest in the subject. They

become impatient and are not willing to remain with the pup conquering the territory as they advance. Such teachers a usually brought to a realization of their error when, a few wee later, a test reveals the fact that, although a few are at haili distance behind, the great body of the students are lost to vie having advanced little if any. Many teachers at this point or become the more impatient, attempting by means of a has review quickly to recover lost time. This is usually unsucce ful, since in all probability the first attempt was more confusi than enlightening.

Exclusive use of developmental question usually wasteful time. As we have seen above, the exclusive use of the lectu method is ineffectual because the teacher usually arrives at t desired objective without the class, but the exclusive use of t developmental question usually tends to confusion with litt or no advance on the part of anybody. At times the teach must sum up and organize the facts that questions have r vealed. It is also necessary at times to pave the way for t question by a short lecture on the part of the teacher. This, far as it goes, is the lecture method. Hence the attempt develop new ideas entirely by means of questions and answe is generally not feasible.

Developmental-question method of approach to new ide likely to lead to discussion that is off the topic. Although the dev opmental-question method is one of the most effective devices f developing new ideas in the pupil, it has the disadvantage of b ing likely to lead the unwary teacher from the topic. This fact illustrated by the following questions and answer which the writ heard while visiting a classroom in charge of a student teache

Teacher. If fate was to decree that Lincoln be assassinated, did it your judgment occur at the best possible time for the good of the natio

Pupil. If Lincoln had lived through the reconstruction period he wou have lost much of the fame which he now has.

T. Why do you think so, John?

The pupil had led the teacher away from the original ques-
on, to which he did not return during the hour. This is not
ncommon in discussions that follow developmental questions.
teacher who can be turned aside from his main objective thus
sily is sure to become the victim of pupils who are not pre-
ared. Parker makes the following suggestion with respect to
gitimate uses of a conversational solution:

In spite of the obvious dangers which beset the use of the conversa-
onal method, it has certain very legitimate uses. As suggested above,
s best place is in the reflective solution of problems which the teacher
as thoroughly mastered and for which the children possess the neces-
ry data in their past experience. In such cases the important things
or the teacher to keep in mind are the following: (1) To avoid being
detracked. (2) To avoid spending too much time in an endeavor to
et the class to discover a point. In order to preserve the balance of
elative values the teacher should give some points outright or after a
rief endeavor of the class to discover them. (3) To adapt the pace to
ndividual differences in capacities, not holding up the bright pupils too
ng or hurrying so fast that the slow have no chance to contribute.[1]

Teacher must have thought through process clearly before ttempting to develop new ideas. Whether lecture or discussion s to predominate in the process of instruction, the teacher nust previously think through the procedure. Owing to the mphasis that has been placed of late upon thinking, the unpre-ared teacher is likely to feel that, if the pupils are kept con-tantly involved in discussion through the hour, real teaching as been going on and the time has been well spent. This is mistake. Classroom thinking which results in extending the upils' world of ideas is not generally brought about by hit-or-niss discussion, but instead is the result of a careful organiza-ion of material under the direction of the teacher.

Teacher must think with pupils. In this connection it should e stated that the teacher who, from native incapacity, cannot

[1]S. C. Parker, Methods of Teaching in High Schools, p. 447. Ginn and ompany, 1915.

think more rapidly and with greater precision than the averag member of the class which he is instructing, has selected th wrong calling. Pupils are almost mature intellectually at th age of fourteen years and are quick to detect the illogica Hence in the upper grades and in high school the teacher wh perhaps in part because of the strain of classroom distractio added to weak preparation, fails to think cogently before th class is soon set down as a weakling by the brighter member A good classroom discussion calls for constant and accurat thinking on the part of the teacher. Accurate thinking befo the class is greatly enhanced by careful lesson planning, bu no amount of lesson planning will relieve the teacher of thinkin while teaching. At this point intellectual effort plus a goodl supply of native capacity is indispensable.

Organization of material for inductive process: (1) surve of pupil's background of experience; (2) its orderly arrang ment to suit development of new idea. The teacher who woul induce a new idea into the minds of his pupils must first di cover in any way possible the present state of their knowledg One may fail at this point by overestimating them, a mistak much more common than underestimating. The underestimate pupil is given at least an opportunity to forge ahead when th boundary of his knowledge is reached. The overestimate pupil, on the other hand, is confused; words and formulas fo him begin to take the place of clear ideas. The writer had th experience as a student of calculus. The majority of the clas were teachers of mathematics who were reviewing the subje during the summer. It was possible for a while for the write to assimilate the ideas underlying the subject, but he very soo discovered that even the ideas which were clear at the beginnin became confused. He then gave up the attempt to understan the subject and began memorizing and juggling formulas. Afte the course was over and he had received a passing grade, he wa worried, because he had taken the course with the intention o

sing the subject. Accordingly he went to the instructor with
ıe confession that he knew nothing about the work covered.
he instructor wisely recommended that it be taken again.
What a useless waste! It should have been clear to the instruc-
or from the second week on that the writer had left the world
f clear ideas behind and was floating around in the clouds of
ormulas. This thing, from one cause or another, is continually
appening in our schools. How many students who talk about
volution or the doctrine of formal discipline have a clear idea
f what either term means? Once such a term, meaningless to the
upil, is incorporated as part
f the background from which
e is to bridge to a new idea,
ne setting is laid for failure.
The organization in the in-
uctive process depends upon
he principle of generalization;
hat is, noting several specific

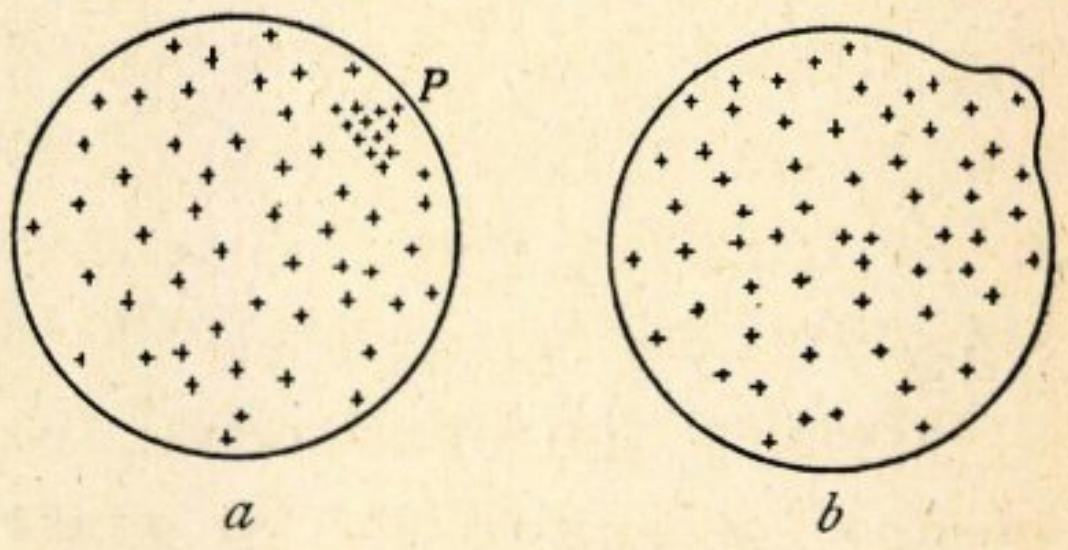


FIG. 36. Representation of the Inductive Process of Attaining a New Idea

nstances, dissociating the principle from each instance itself, and
nally attaining clear ideas of the principle as an abstraction.
However disguised, this process is just what is going on when-
ver new ideas are being attained inductively. It is a mat-
er of analysis, dissociation, and reorganization. The pupil, in
oming to a new problem-exciting experience, sees it at first as a
ague, unanalyzed whole. He proceeds to break it up, attend-
ng to each part separately. A reorganization of the parts then
akes place with respect to some hypothesis which, if found not
o conflict with the pupil's general experience, is accepted. If
onflicts arise, further study and reorganization take place. It
s the purpose of the teacher here to enhance this process.
Whether he depends largely upon the lecture or the quiz device,
e must help the pupil to discover through what he already
nows, to organize this material in the light of some purpose,
nd, finally, to test conclusions in the light of his past experience.

Let the area inclosed within the circle *a* (Fig. 36) represe the pupil's world of clear ideas. Let the crosses within the circ represent the ideas themselves. The concentration of crosses the point *P* will indicate the organization of those clear ide which have been selected for t purpose of introducing a ne idea. The V-shaped arrangeme of the crosses indicates that it necessary not only to select t old ideas which are required the process of developing a ne idea but to arrange them so tha each supports the other. T bulge in the circle *b* indicates the expansion of the pupil's wor of ideas at the point *P* in the circle *a*. The cross within t bulge indicates the new idea that has been induced. The absen of the V-shaped arrangement of crosses in *b* indicates that t ideas which were called forth and organized for the purpose inducing the new idea are no longer necessary to support it.

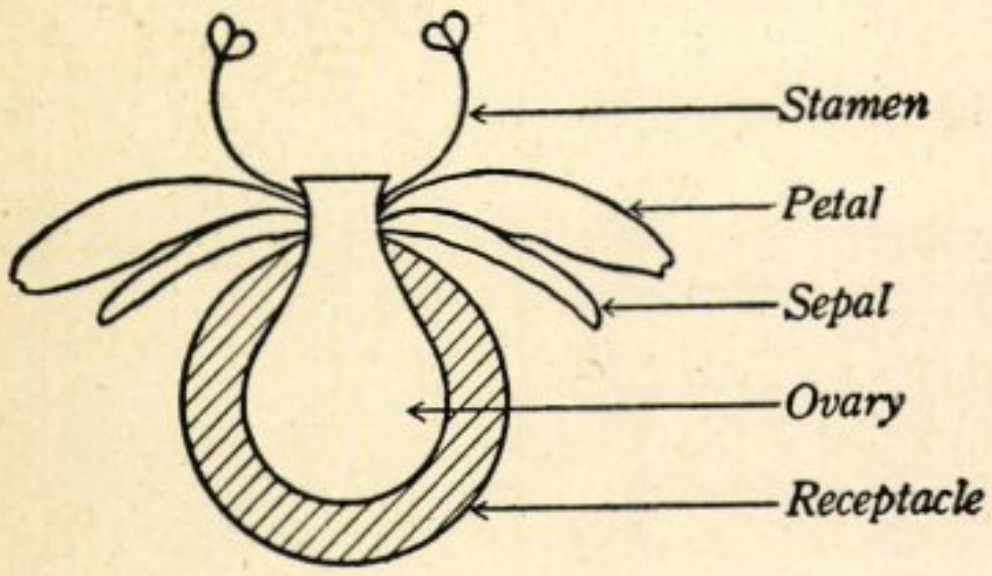


FIG. 37. The Parts of an Apple Blossom

The following is an example of the inductive method:

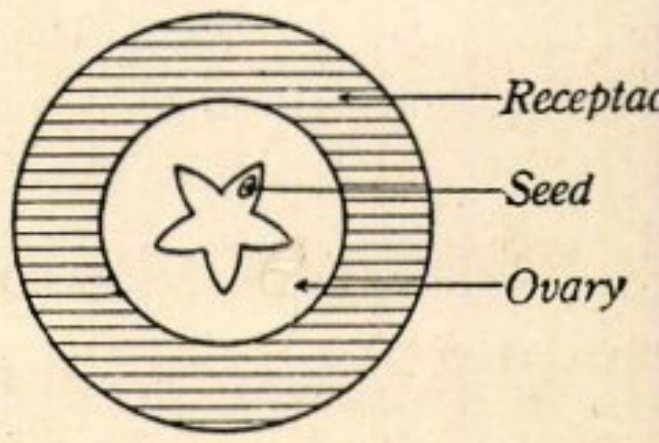


FIG. 38. A Cross Sectio of an Apple

Teacher. This drawing [Fig. 37] represents an apple blossom. What do you notice that is peculiar about the receptacle of this flower?

Pupil. It is all round the ovary.

T. Yes, that is a distinctive feature of the apple blossom. I hav given each of you an apple. Cut it as I have cut this one [Fig. 38 Can you locate the receptacle, the ovary, and the ovules? What ha happened to the original ovules?

P. They were fertilized and then they developed into seeds.

T. Can you locate the line between the ovary and the receptacle

P. Yes.

T. The developed ovary and ovules are always present in a frui Sometimes the ripened receptacle is also present, as in the case of th apple. Can you then define a fruit in terms of its flower parts?

P. A fruit is a ripened ovary together with those parts of the flower hich may ripen with it.

T. Correct.

Organization of material from deductive standpoint: (1) rvey of pupil's experience by teacher; (2) setting up general- ations justified by pupil's experience; (3) establishing gen- alization by verification. In general, the deductive process is ore rapid and offers less difficulty in application. The teacher ho uses it is less likely to be sidetracked than is the teacher ho uses the inductive process. The deductive process has this

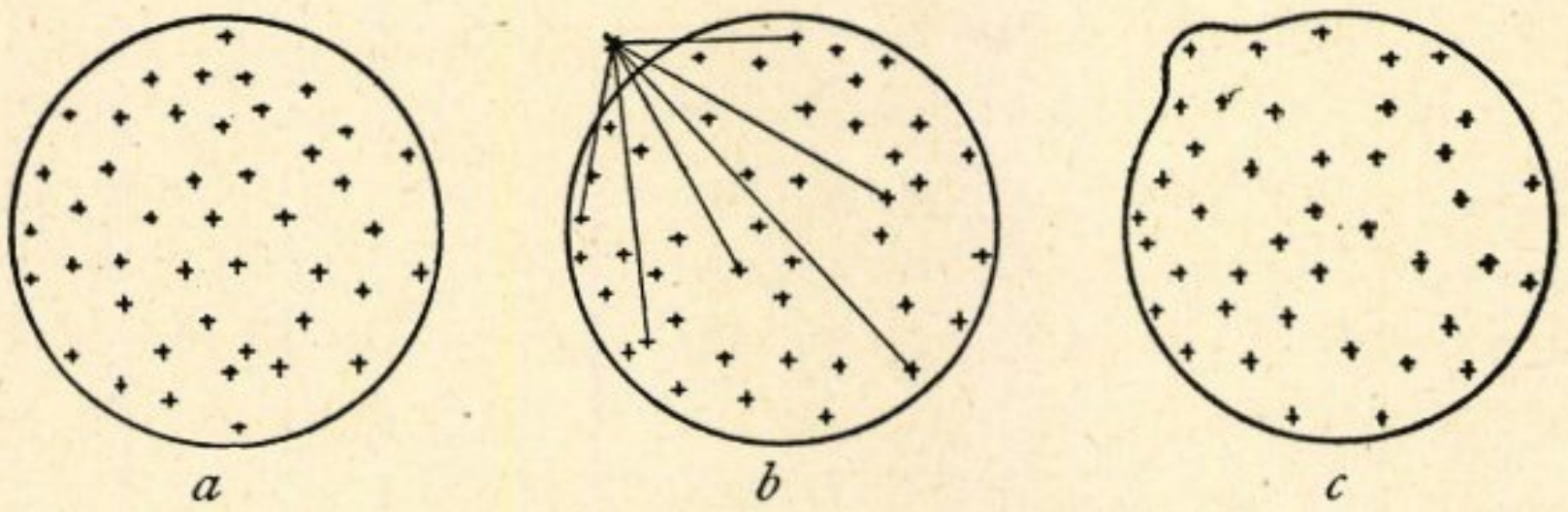


FIG. 39. Representation of the Deductive Process of Attaining a New Idea

isadvantage: the inexperienced teacher is apt to fail to estab- sh the new idea thoroughly through not insisting upon a num- er of verifications at each point of progress. There is danger lso that the generalization will be so far from the pupil's expe- ience that the teacher will waste time in trying to bridge to it. The crosses within the circle *a* represent the pupil's world f clear ideas, each cross representing an idea. Let the cross ithout the circle *b* represent the new idea which has been iven by the teacher, but which is not yet a part of the pupil's orld of clear ideas because it has not been developed out of is world of ideas and is not supported by them. The lines n *b* from the new idea to a few of those within the circle in- icate that part of the deductive process is going on, in which he teacher brings the new idea into relationship with the upil's old ideas. The bulge in the circle *c* indicates that the ew idea has become part of the pupil's world of clear ideas.

The following is an example of the deductive method:

Teacher. It has been said that the battle of Bull Run was a Northe victory. Can you justify such a statement?

Pupil. Well, the North began immediately after this to prepare for more vigorous campaign against the South.

T. What about the South?

P. The South thought the war won and began taking matters eas

T. But since the Northern forces were driven in confusion to Was ington, does it not seem absurd to call this a Northern victory?

P. It was an immediate victory for the South but an ultimate victo for the North.

T. Suppose the South had won.

P. In that event the outcome of the war might have been differen It taxed the North to its full capacity to defeat the South as events wer

T. Then you see that, although the immediate outcome of the e gagement at Bull Run was a decisive military defeat for the North, proved ultimately to be a Southern loss and a Northern victory.

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LESSON XXXVI

im. To become efficient in the presentation of those parts of a lesson which lead to appreciation.

In the previous lesson we discussed the development of ideas. Ve now come to a consideration of the problem of developing ppreciations, which are no less important. It is possible to onceive of a philosopher's maintaining that appreciations are, n the last analysis, the more important, from the fact that they re ends in themselves rather than means to ends. Hence we, as eachers, must ever keep in mind the need of developing appre-iation, and we must become skillful in the art.

At this point we should note that the developing of appreciation, as the term is used in this text, differs from the developing f ideas in that emotional elements generally accompany appre-iation. The psychology of the emotions in their relation to he intellectual process must be understood. In the first place, t should be noted that emotions are peculiar states of feeling esulting from bodily changes. They are often at war with the ntellect, frequently owing to the fact that the neural paths which set them off were established before the intellectual life ad reached maturity. For example, we may cling to the likes nd dislikes of childhood long after the intellect has condemned hem. Hence it is important that these emotional activities be aid with great care, so that in later life there may be less necessity or radical readjustment. This means that the child's emotional levelopment should be directed intelligently to the end that the best in art, literature, ethics, etc. shall give him pleasure.

Enjoyment lessened by turning attention to technique of roduction. Not only is enjoyment possible without under-

standing the means by which the results are produced, but t turning of attention to means of production may well be e pected to lessen the enjoyment. The writer's enjoyment the gridgraph, a device for graphically recording on a scre play by play the progress of a football game, was for a tin materially lessened by his being informed of the manner which the game was brought to the stage. He found that could regain some of that lost enjoyment by deliberately refu ing while watching a game to give attention to the means production. And so it is with similar forms of enjoymen When one becomes critical of the technique of conveyance o reacts upon the intellectual level and hence reduces for the tim being the possibility of reacting upon the emotional level.

Knowledge of meanings not to be confused with knowledg of technique. Knowledge of meanings must not be confused a this point with knowledge of technique. One may, for exampl study a poem intensively and gain in appreciation as one learn more and more of the previously hidden meanings. The Laocoö group means much more to one who has learned the truth which the sculptor was attempting to relate and who has studie them in connection with the production. This type of know edge is necessary to a full appreciation of any work of ar Knowledge of technique, on the other hand, seems not to b necessary. Many of us can enjoy a musical concert withou the ability to read a line of music, or enjoy a great paintin without the least ability to paint. When this fact is couple with the experience common to all of us of hearing one wh knows something of technique complaining of the artist's form of expression or lauding the most excruciating production o the grounds that the technique was difficult, we feel certain tha knowledge of technique is likely to turn one's attention t technique rather than to that which it produces.

Liking for the production should be developed before pupil attempt to reproduce it. If the pupils do not develop a likin

r the production before attempting to reproduce it, their own eak efforts are apt to become the center of attention, thus wering their appreciation of the masterpiece. This precau- on is more necessary as one deals with more and more beau- iful works of art. In the case of literature the teacher should ad a poem through several times, at intervals, in order to as- re enjoyment on the part of the pupils before allowing them read it or analyze it. If pupils are allowed to render music or oetry, the most capable pupil should be selected for the task, nd careful preparation on his part should be insisted upon. fter the pupils have learned to like a given selection, it may be nalyzed and otherwise considered intellectually with less dan- er of ruining the possibility of enjoyment.

It may be objected here that sometimes, as in the case of rowning's works, analysis and study are necessary from the rst if the pupil is ever to appreciate. The objection is valid, ut the type of appreciation sought here is dependent more upon ne intellect than upon the emotions. Of course, all apprecia- on has an intellectual background in the sense that meanings re being conveyed; but the difference between intellectual and motional appreciation lies in the fact that the latter arises rgely from beauty of expression, whereas the former arises rgely from keenness of analysis and delineation. Such a dis- nction in types of appreciation is necessary, however, only in ne case of literature. Something somewhat akin to intellectual terary appreciation takes place in the case of the appreciation f technique. The difference here is perhaps quantitative rather han qualitative.

One learns to appreciate the best in music, art, literature, etc. y participating sympathetically in their outcomes. One is ided in learning to appreciate by taking a sympathetic atti- ude toward that which is being appreciated. The beauties in oreign art or literature are not readily seen by the one who iews to scoff. The reason for this can be understood when one

recalls that, in the last analysis, appreciation is an emotion reaction and that one emotion is blocked, in part at least, the simultaneous functioning of another. Hence pupils shou be prepared to appreciate by creating an atmosphere favorab to the task. Sacred music would lose much if played at a foo ball game, as would a waltz at a funeral. The setting must appropriate.

Teacher should aim to develop appreciations recognized as the higher order by persons most fitted to judge. It is in kee ing with our natures ultimately to select that which the expe enced individual calls the beautiful, when we have participat in it long enough. One cannot go behind this. It is simply fact. Our natures are such that one set of stimuli pleases an another displeases. The teacher can set up only such situatio as will provide the stimuli that ultimately should give tho experiences which are recognized as of the higher order b persons fitted to judge.

Ability to appreciate cannot be forced upon individual. Aft all, the pupil must learn to appreciate for himself. Any attem on the part of the teacher to force an expression of pleasu from the pupils will tend to defeat the aim and also to encou age hypocrisy. Such expressions should come naturally fro the pupils. Teachers commonly make the mistake of indulgi in exaggerated expressions of their appreciation, in the hope hastening the process on the part of the pupils. Such cant quite readily detected even by young children, and its effect almost sure to be negative. The oversentimental artist di gusts many of us to such an extent that we draw ourselves awa from the object of his admiration. This should be a lesson f the teacher. It is the sincere appreciation on his part, not ove drawn with words, but expressed modestly and, above all, live in his actions, which is effective.

Teacher must appreciate that which he would have pupi learn to appreciate. One of the greatest helps in teaching appr

ation is a lively appreciation on the part of the teacher him-
lf. This cannot be feigned, for emotions are radiated not
rough words but through observed emotions. An enthusiasm
at is contagious may be detected in the voice, eyes, and pose
the teacher who is deeply appreciative of that for which he is
ying to develop appreciation. The teacher, for example, who
nnot enter into a child's poem with the children themselves
handicapped to a great extent. He must, if he would improve,
minate this defect by an effort on his part. If he does not
ow paintings and something about the masters, he will find
at extensive reading about them is likely to prove pleasurable
well as profitable. All that we have said above concerning
veloping appreciation is as applicable here as in the case of
e pupils.

Appreciation depends upon growth and nature of experience. terpretation and appreciation depend upon the fund of ex-erience that may be applied to a given situation. Imagine one ho was never outside of his home town trying to read Rudyard ipling's tales of British army life in the Orient. He could arn to pronounce the words, but they would lack the thrill and armth of meaning necessary to any true appreciation or evalu-tion of the scenes described. An individual who had served a ear in the National Guard would have a decided advantage in at he has experienced some of the general characteristics of e life of a soldier. One who had served one year with the ritish army in the Orient would reflect with a thrill or with epression upon phrases meaningless to the guardsman. But to e British soldier who had served twenty years those phrases ould bring meanings as realistic as to Kipling himself.

The reader may verify this. Recall your appreciation of some xperience before and after its occurrence in your own life and ote its change in color. Those of us who have not yet experi-nced a given bitter incident do not know how to sympathize ith our neighbor who is undergoing it. The writer's attention

was strongly drawn to this fact in observing the photopl*Over the Hill*, based on a poem by Will Carleton. Childr were laughing at the incidents as they occurred, youths we almost indifferent, and many old people were crying. The di ference in attitude came from the difference in experienc Youth cannot fully understand age.

Teacher must so organize process that pupils' background experience is most effectively utilized. As in the case of develo ing ideas, it is the work of the teacher in developing appreci tion to enhance the process of development. It is necessar then, in preparing for a class discussion the purpose of which to develop appreciation, for the teacher to formulate and o ganize such a battery of questions as will best bring in t pupils' past experiences. The questions should serve also to ca their attention to significant points which would otherwi escape them. These points may refer to form, for that also significant in interpretation.

To quote Professor C. H. Judd[1]:

> The writer recalls with grateful appreciation the skill with which h college teacher of English literature gave him a lesson in literary inte pretation by compelling him to contrast two lines in Hamlet which we being read orally in class. In the fifth scene of the first act Haml replying to the Ghost's injunction "Remember me," says:
>
> Remember thee!
> Ay, thou poor ghost, while memory holds a seat
> In this distracted globe. Remember thee!
> Yea, from the table of my memory
> I'll wipe away all trivial fond records.
>
> The recurring exclamations "Remember thee!" had been read in t first instance with the same intonation. The instructor called attenti to the desirability of distinguishing the two phrases in the two cas Finally, the learner saw that the first "Remember thee" emphasized t word "remember," the second the word "thee." From that moment

[1] Psychology of High-School Subjects, pp. 201–202. Ginn and Compan 1915.

effort to interpret all the lines of the drama was of a wholly different
e. The teacher had taught discrimination. This discrimination was
natter of form; but it reacted on content, and the content became
nificant and illuminating from the moment the discrimination was
arly made.

**Teacher should not attempt to develop appreciation beyond
int justified by pupil's experience.** It is necessary for the
acher to be constantly on guard against attempts to develop
preciation upon an insufficient background of experience.
ch attempts will be as fruitless as attempts to develop
w ideas from an insufficient ideational background. The
ementary-school pupil is about as incapable of fully appreciat-
g *The Boys*, by Holmes, as he is of solving a problem in
alytic geometry. Parts of each are entirely foreign to his
perceptive background. As a rule the newer and better text-
oks will have solved this problem partially as far as literary
preciation is concerned. Even here, however, there is plenty
room for thought on the part of the classroom teacher. Pupils
different communities will vary widely in the kind and
nount of experience obtained and hence will require varying
nds and amounts of preparatory material. Compare the back-
ound of experience of the average pupil of a New England
aport town with that of the average pupil of Columbus, Ohio,
r the study of *Enoch Arden*. Even the pupil who has visited
e seashore has a decided advantage over one whose experience
as been limited to a river or a mill pond. Watching ships
me and go, playing in sand on the beach, meeting coarse
ilors on the streets, etc. are necessary units in the pupil's
ackground of experience for a full appreciation of this poem.

Setting for appreciation should be prepared with care. The
reparation of the setting for the appreciation lesson is very
nportant and hence should be done with deliberation and care.
n the first place, the time of day is a factor. To attempt an
ppreciation lesson just after the pupils have indulged in violent

exercise upon the playground or when mentally tired from p
longed attention in the classroom is to lessen the chances o
successful outcome. The first hour after dinner, when
pupil's ability to respond is usually lowered by the work
digestion, is likewise an undesirable time for an appreciati
lesson. The last hour on a Friday afternoon just before a fo
ball game will find pupils generally too much stirred up to
tend well to that which is to be appreciated. Owing to the f
that pupils do not do well at purely intellectual tasks at th
times, many teachers are likely to make the mistake of rese
ing these periods for appreciation lessons. Although somethi
may be obtained at intellectual tasks, positive harm may
done by attempting to develop appreciation when the mood
the pupil is not suited to the task. If, as F. H. Hayward su
gests, we are going to make appreciation lessons red-letter l
sons, long prepared for and given only at proper intervals,
must use care in selecting the most favorable time. Of cour
appreciation will be developed in connection with other lesson
for this, only momentary preparation can be made, and no
tention can be paid to such matters as the time of day. T
foregoing applies only to the lesson that is given over almo
entirely to appreciation.

An introductory comment, such as "This is considered
artists to be one of the best paintings of the age in which it w
produced," or "This poem contains two of the most beauti
lines in literature; try to discover them," will often lend t
needed immediate interest. A description of the circumstanc
under which a poem was written will often serve to lend app
ciation. Such an introduction might serve the purpose of prep
ration for study of a poem, but a lesson in history might
required to prepare properly for the appreciation of sculpture
architecture. Gothic architecture, for example, can mean lit
to one unacquainted with the ideals out of which it develope

e proper preparation for such a lesson would require weeks historical study. This, of course, should come in connection h the regular history work.

Success of appreciation lesson may be judged by enthusiasm class. It is easy for a visitor to determine the success or lure of an appreciation lesson. One does not need to study tically the technique of the teacher. The class that is truly preciating will be alert and interested. The visitor himself oon likely to forget that he is visiting and share the pleasure appreciation. This is the final test of a well-taught appreciaon lesson.

The following stenographic report of a lesson in English erature should be studied carefully, noting strong and weak nts in the procedure.

Teacher. All right, you may open your books. Do you remem- the circumstances, I told you the other day, under which this em was written? The poet is under a tree listening to the song the nightingale. What does he tell us, in the first stanza, of the ect of the nightingale's song upon him, Harry?

Student. He feels as if he had been drinking hemlock and he ks Lethe-wards, or goes into a state of unconsciousness.

T. What brings out that unconscious state?

S. "Drowsy numbness" and his "heart aches."

T. What does he say is the reason for that? Is it that he envies happiness of the bird, or is it some other reason?

S. No, he is not envious, but he is too happy in the bird's ppiness.

T. Yes, I wonder if most of us would be so sensitive to the song the bird. I feel not. He was very sensitive to all things of nature. ry often he trembled and wept for joy over some sweet sight or und. He is much more sensitive than the most of us are. What es he call the nightingale in the first stanza?

S. "Light-wingèd Dryad of the trees."

T. Why is that an effective name to apply to the bird?

S. I do not know.

T. What is it, Olive?

S. Well, it is a kind of nymph which comes from the woods a air like a fairy.

T. Notice what he brings out in regard to the song of nightingale in the last three lines in that stanza.

S. In the last three lines he tells where the bird sings, and y can just see the shadows flitting around. "Full-throated ea describes the song.

T. Yes. Does that remind you of the song of some other bi of which we have read?

S. Skylark.

T. Then go on to the second stanza, and what is it that wishes for?

S. He said he wanted something to drink, and he wants to "le the world unseen" and to forget everything and to go with bird into the forest.

T. Does he ask for anything?

S. He wants some wine.

T. He wants some very old wine. Is the old wine the best wi

S. Yes.

T. What else does he say about the wine?

S. He wants some wine just full of mirth and true romance. wants a "purple-stainèd mouth."

T. Why does he wish for "a beaker full of the warm South

S. Italy and France make about the best wines in the world, a there seems to be a romance connected with the wines of th countries.

T. And they do produce the best wines made. There are ot points we should bring out. Does he make you want this wi

S. Yes. "With beaded bubbles winking at the brim" ma one want it.

T. The second line, we have not had all of that given yet, a that is effective. All right, Phyllis.

S. I think the words "deep-delvèd earth" are very impress that this wine has cooled for a long time. I think the word "co is very expressive, don't you?

T. Yes. Then in the next stanza what does he say?

S. He says he wishes he could fade away and leave all his eart care and be like the bird and know nothing about these complai

d the place "where men sit and hear each other groan" and tell the trouble they have on earth. He also compares youth and old e. He says youth and old age are both full of sorrow.

T. I think we had better have some of the expressions.

S. "The weariness, the fever, and the fret," "where men sit and ar each other groan." In another line he is referring to his ther, "where youth grows pale."

T. Do you have a picture of that? The next two lines have me fine descriptive words in them. What is brought out?

S. Do you mean the third and fourth from the last?

T. Yes, "Where but to think is to be full of sorrow."

S. You cannot even think down here because you are full of rrow. All things seem to have a greater portion of sorrow in em than of pleasure. It shows that he has been brooding a long ne over these, not just ten minutes or half an hour, or something e that.

T. And then the last two lines probably refer to what, Mary?

S. His sweetheart. That says, "Beauty cannot keep her lus- ous eyes."

S. I suppose he is thinking of sorrow all the time.

T. Phyllis.

S. I think he is referring to his own love affair. He would rather e dead because he is absolutely in misery here on earth, and death ould be a relief to him. In the next two lines he expresses the ea that he would die young.

T. What does the line mean, "Though the dull brain perplexes nd retards"?

S. It is so hard to put your thoughts into words expressing at which you feel so keenly—to put it into words is almost npossible.

T. Harry has a different idea.

S. It is difficult to achieve anything under pleasant conditions.

T. Helen.

S. Under the influence of this wine it is hard to think.

T. But he is not going to drink the wine.

S. He has decided to get away from these worldly cares, and the ull brain holds him.

T. Imagining sometimes seems difficult. Does it seem difficult r him to fly away?

S. The brain retards, but he is with the song of the bird alread
It does not take very long for him to run away from here in t
tender night.

T. What sort of night is it, Amelia?

S. It is a clear moonlight night. He says "haply the Quee
Moon is on her throne, cluster'd around by all her starry Fays

T. Does this suggest much light? This is how he pictures t
moon and the stars. He speaks of the moon as being a Queen ar
the stars as Fays. What are Fays?

S. Attendants or fairies.

T. The Queen-Moon and the fairies about her. Is there muc
light on this particular night, Helen?

S. Well, there is no particular light here. He seems to be u
with the moon, or he seems to be flown away with the nightingal

T. The next stanza. Tell us what he may find at his feet.

S. Flowers.

T. What does he recognize and how does he recognize them

S. He says he cannot see what flowers are at his feet nor wha
"soft incense hangs upon the boughs," but in the dark he ca
guess each, because of the season. He says the grass, the thicke
fruit-tree, white hawthorn, pastoral eglantine, and violets covere
up in leaves, and mid-May's eldest child are here.

T. What is "mid-May's eldest child"?

S. Musk-rose.

T. Well, how does he know these flowers?

S. Maybe by his feeling.

T. Roy, what does that mean?

S. It means that he can tell by the season.

T. Yes, that is one way. May.

S. I think he just sort of feels this, and he can smell the perfume

T. Are there any words or phrases that suggest odors?

S. "Sweet."

T. Yes, "sweet." Is there anything else that might suggest it

S. "Soft incense hangs upon the boughs." That suggests tha
something is there.

T. "Soft incense." All right, are there any other expression
that bring out the same idea near the last of the stanza, Helen?

S. Well, "dewy wine," it seems to me, would suggest the odo
of flowers.

T. What sort of flower would that be?

S. Musk-rose.

T. Can you associate odor with the violet, the musk-rose, and wthorn?

S. The violet has a very delicate odor; the musk-rose and haw-orn have rather heavy odors.

S. He says in the last line that he hears "the murmurous haunt flies on summer eves." Seldom does one read a description where e buzz of flies is agreeable, but this seems to be so.

T. Do you suppose he means the ordinary flies, or does he mean sects in general?

S. Insects in general.

S. Don't you think in this whole stanza, perhaps, he is com-aring it to his own life? Perhaps he cannot see all these things, nd yet he knows they are there.

T. Yes, it may be. The next stanza.

S. He is listening in the darkness. Many times he has longed or death and wanted death to come. It would be a joy for him, ut he says all he can do is just sit there and listen to the bird's nging. Death does not seem to come to him, and many times he as called death "soft names in many a musèd rhyme."

T. What does he mean by that line you quoted a minute ago?

S. I think he is cherishing the hope that death will come soon, nd he calls it sweet names because he is longing to die.

T. But where does he call it sweet names?

S. He calls it sweet names in his poetry.

T. We read one line in which he called death sweet names and oft names. He says, "Now more than ever seems it rich to die." He wants death to come to him upon the midnight with no pain. He has not received that joy yet. He says death would now more han ever be sweet because he has no pain and the nightingale's ong makes it seem more wonderful. He says, "While thou art ouring forth thy soul abroad in such an ecstasy! Still wouldst hou sing, and I have ears in vain." What does that mean?

S. Well, he would be dead and he would be unable to hear this ong, and yet it would be there.

T. Talk a little louder, please.

S. The song of the nightingale would seem as if it was a uneral hymn.

T. Thoughts of his own death suggest what to him in regard the bird, Mary?

S. Well, he says that the bird was not born for death.

T. What does he mean by "immortal Bird"?

S. The song of the bird had been heard for generations gone b and it just compares his life to that. He knows he has not ve long to live; and, well, it just suggests to him that the bird has longer life than he.

T. Is it the bird itself or the song of the bird?

S. Song of the bird.

T. What picture is brought up here by "voice I hear," etc.?

S. The song of the nightingale had been heard by all class of people in ancient days—"by emperor and clown." He says was heard by the highest and the lowest classes of people.

T. You had a suggestion, Helen.

S. But I have forgotten it.

S. I like the line where he says, "No hungry generations trea thee down." There are many things that from generation t generation are lost, but it is not so with the song of the nightingal It lives through many generations.

T. So, then, it is the song of the bird that is immortal, and th song of the bird goes on from generation to generation. What pi tures are called to mind?

S. He says that it may be "the self-same song that found a pat through the sad heart of Ruth, when sick for home."

S. It pictures Ruth in a foreign country. She is all alone amon strangers, and she is listening in the fields "amid the alien corn

T. This is very poetical and very suggestive. What pictures ar brought out in the next two or three lines?

S. "The same that oft-times hath charm'd magic casements, open ing on the foam of perilous seas, in faery lands forlorn." Perhap something like the evening as it did not refer to that nightingale.

T. Anyone have another picture in mind?

S. This gives a picture that is very expressive to poets, whic is of the cliffs overhanging the Mediterranean Sea, because it say by the foaming sea.

T. Since you have been over the death covered in the *Idylls o the King*, is there any story connected with it in your mind? H wants us to have a picture. All right.

S. Perhaps it is a little old castle with vines all over it, and rhaps his sweetheart has listened to the bird there, and the bird st connected his old romance with it. She has come here in the ght charm and is looking down, wishing for a prince to come and ease her.

T. This picture is "in faery lands forlorn." What effect does e word "forlorn" have upon the poet?

S. When he speaks he seems to be alone, and it makes him elancholy.

T. Lucille.

S. It brings him back from imaginative things to earthly things. e is far off with the flights of the song, and that word brings him ck to the trouble and cares of the earth. He says it "is like a ll to toll me back from thee to my sole self!"

T. What does he say in the next two or three lines about fancy?

S. He says that "fancy cannot cheat so well as she is famed to ." Although you think you can go with fancy, you are sure to be lled back.

T. Perhaps he refers to the fourth stanza. It is the dull brain at brings him back. What about the song of the bird?

S. Well, he says that the song of the bird is getting farther way, and it seems to him that the bird is going over a hill.

T. Yes, I would like to have all of that—it is so expressive. e hears the song go farther away over the meadows, "over the ill stream, up the hill-side; and now 'tis buried deep in the next alley-glades." What is the verb?

S. "Is buried" is the verb in that line.

T. When the poet comes to his mind he asks himself if it is "a sion, or a waking dream." What answer would he like to give to at question, "Do I wake or sleep"?

S. It has been so dark to him that perhaps he feels that he has een suddenly awakened.

T. What characteristics of Keats are brought out in this poem? 'hat would be your estimate of him?

S. I think the song is very delicate and beautiful; most eople would like the song, but they would not have the words express it.

T. I think the delicacy of it is one of its greatest charms.

S. He brings beauty to everybody.

T. Of course, that idea of beauty is one of his outstandi points.

S. His selection of words and the peculiar way in which he us them. In fact, he uses words in places you would never think their being used. In that way he shows his love for color.

T. Do you remember what he says about beauty?

S. He says that most of us do not recognize the beautiful thing as they are generally merged into so much sadness.

T. In fact, the saddest things of life are the most beautifu There is the undercurrent of sadness. What does the word "mela choly" suggest?

S. The word "melancholy" seems to mingle beauty and sadnes I think perhaps that it is through labor and the difficult things life that the beautiful and worth-while things are achieved.

T. Has anyone else something to say about this poem? By t way, who is the most subjective poet?

S. What do you mean?

T. The poet who puts his own feeling into his poems.

S. Keats.

T. Yes, he does express his own mood. Keats is probably r ferring to his own love affair in this poem. I think we shall n take the other poem this morning. We shall take it up anoth day. For tomorrow's assignment, I want each one of you to repo on a poem of either Keats or Shelley. You may select the poe That is all.

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LESSON XXXVII

Aim. *To become efficient in teaching pupils to think.*

One cannot improve quality of mental machinery. If one going to teach pupils to think, he must do it not through i proving the quality of the underlying machinery (the neu patterns) but through setting the machinery to work. There no possible way to add one cubit to one's mental stature. Th was determined by the nature of the germ cells which gave ri to the existence of the organism. The capacity for reaction a constant; the utilization of that capacity is a variable. It with this variable that we must deal in teaching pupils to thin Capacity to think is born with us; the amount and effectiven of the thinking which the individual will do will depend, giv any stated capacity (I.Q.), upon the experience to which he subjected. It is our part, as teachers, to make this experien in a large measure conducive to reflection.

Experience supplies material for reflective thinking. Be th capacity of the mill what it may, grist is necessary to the pr duction of flour. So with the mental activity of the organis If the machine is to produce, the experiences must be supplied An organism that from infancy was isolated would functi on the plane of the idiot. Enriching the experience of the o ganism is the first step in causing mental capacity to fun tion. And to the extent to which this experience is enriche both in quantity and quality will effective thinking be possibl He who would teach pupils to think must provide therefore f the expanding of their experience. No small part of this exp

[1] The comparison of the mental side of the organism to a machine has l in the past to error. It is done here for the purpose of illustration only.

ence must be gained vicariously through reading. A part may attained through the exchange of experiences by classmates d teacher. The most fundamental experience, however, must me through direct contact with life's situations. It is through r direct experience that we profit by that which is vicarious. he boy who has never played in the sand on a hot summer's y lacks an important element in reflecting upon the problems the Sahara. Book descriptions of the situation there are eaningful only in so far as we, through our direct experience, n supply the needed elements: one, perhaps, taken from this tuation, another from that, but brought to the book by the ader.

Reflective thinking a habit. One who has supplied the pupils ith the materials of thought, that is, with the experiences nec- ssary to reflecting, has still no assurance that the amount of eflecting which they will do both in school and out will be aterially increased. A pupil may, in passing through the chools, absorb a vast deal of information but not acquire the abit of turning it over in his mind. His reaction to this mate- al is purely on the level of recall. He does not weigh and onsider. This condition, of course, may be owing in part to he fact that his mentality is of low grade. It may, on the other and, be owing entirely to a lack of proper training. School- oom activity may have ceased on the information level, with he result that the pupil never formed the habit of thinking. he teacher was satisfied when he got back on the quiz the facts hich he had previously taught. His attention was centered pon subject matter rather than upon the pupils' needs, with he result that the pupils were hurried over a vast deal of ontent but did little reflecting upon it.

Ideals of truth. There is still another outcome that must be btained if one is properly to lay the basis for effective thinking. he individual may do considerable reflecting but, not being uided by such ideals as modern science has developed, fall far

short of his possibilities. Many people, for example, spend large part of their thinking in rationalizing their prejudic They have not learned to be objective in weighing evidence testing a premise. They are not willing to get the other fellow point of view. "I believe" and "I feel" get in their way searching for the facts. The result of all this is, of course, th the product of the individual's reflection is of low grade. H needs ideals of truth. These are not easy to obtain late in li They should have been developed in the schoolroom.

Getting pupils to think. Up to this point in the lesson w have been discussing the background of experience which t individual must have if he is to do effective thinking. In t first place, he must have received from his environment a va deal of experience, both direct and vicarious. This experien forms the materials which he rearranges during the process reflecting. Along with this he must have formed the habit reflective thinking and have developed such ideals of truth will cause him to leave his emotions out of the process. Fro this point on we will deal with the technique of causing t pupils to think in the classroom and of building up at the sam time habits of thinking and ideals of truth.

Failure to give pupils concrete background of experien with which to think. As was said above, thinking is possib only in so far as one possesses a background of direct experienc This fact offers an important suggestion for the classroo teacher. Too often the reactions of pupils are entirely on t verbal level. They have, for example, learned the metric tab of linear measure and are beginning the solution of problems terms of it. It is scarcely possible for them to determine advance what the approximate result should be. If they obta ten kilometers per hour as the average rate of an army on t march, they appear satisfied with the answer, much to t amazement of one who knows kilometers in terms of distan on the earth's surface. Many pupils would make the sam

ror in computing in terms of miles, again much to the amaze-
ent of those who have walked miles with a knowledge of the
stance and of the time.

There is really nothing amazing about this. The pupils
erely lack the background of experience with which to think.
ny of us would make corresponding mistakes if dealing with
oblems which outrun our experience. The pupil who thinks
his neighboring state as a map on a given page of his geog-
phy is one who has not traveled and mapped the region around
s home, or has not transferred his experience in further geo-
aphical study, or both. The effective reading of maps is an
npossibility for such a pupil. The Rocky Mountains as seen
n the map are meaningful only in so far as he has compared
eir height and steepness to the hill which he knows and their
bstance to the rocks of the neighborhood. The teacher must
ver be aware of the possibilities of this lack of concrete back-
round and invent ways and means of supplying it. When
dvancing to new concepts he must pave the way by marshaling
uch elements of the pupils' experience as can be brought to
ear on the problems in hand. This will include using analogies,
eferring the pupils to their former experience, giving the neces-
ary previous experience, etc. All these factors must be at-
ended to if the teacher is to form the proper apperceptive
ackground for reflective thinking.

**Thinking should be done in situations akin to situation in
hich pupils will be placed in life outside of school.** Modern
sychology teaches us that the transfer to another situation of
he training received in a previous situation will depend in part
pon the presence of elements in the later situation which are
dentical with those of the earlier situation. If, for example,
ne has learned that 9×8 are 72, this bit of information or
timulus-response ability is valuable only in a situation in which
ne needs to know the product of 9 and 8; it is worthless on
ll other occasions. There are, of course, more general ele-

ments or reactions which are not so limited in their possibili of transfer. These exist in the form of habits of generalizati and ideals. The pupil who learns to generalize his experien or develops ideals of truth through the study of science h developed abilities of the widest possible application.

Two things at this point should be noted. In the first plac these more general elements should not be expected to transf unless they are developed with a conscious recognition by th pupil that their application is wider than the fields in whic they are being perfected. In the second place, one may expe transfer to weaken as one goes farther and farther from th situation in which the reaction was originally made. Neatnes in English composition might, if properly taught, be expected t improve the neatness of arithmetic papers. One would not ex pect it to improve to the same degree neatness in the matte of dress.

The foregoing discussion offers suggestions on the matter o teaching pupils, through thinking in the classroom, to thin effectively outside of school. The elements to be transferre vary all the way from the most specific stimulus-response situa tion to the most general. There is little question about th specific responses which are valuable. To know 9×8 are 72 perhaps needed by all. To know that Spalding is a village i Michigan is perhaps needed by none. As to the more genera responses we are equally sure of their value but differ only o the method of attaining them. Can some of them be develope better in the study of mathematics than in the study of th social sciences? If so, we still have to face the question as t whether or not the former is not so far removed from the situa tions we shall meet in life as to make the possibility of effectiv transfer less likely than in the case of the social sciences. Gran ing that one might, for example, develop in connection wit higher mathematics ideals of exactness of expression superior i quality to those developed in connection with history, it sti

ould not follow that the exactness of expression developed in nnection with mathematics would function more effectively a social situation than that developed in connection with story. Most of us would be inclined to doubt it upon empiri- l grounds. Our suggestion, then, is to train pupils to think in tuations as nearly as possible akin to those in which they will called upon to think when they leave school.

Thinking should be done in connection with live options. hat which does not make any practical difference is not good aterial for stimulating the average pupil to think. The use of e nonsense material that was placed in the older arithmetics is good example of this truth. The solution of its puzzles did mmand the efforts of the bright pupils, but it is a safe assump- on that the class as a whole did not take hold of the work with e satisfaction with which they would have taken hold of prob- ms relating to their everyday lives. In the same manner prob- ms of the city have not the appeal to the country boy or girl at problems relating to rural life have. The pupil should be ade to understand the significance of the problem that he is eparing to solve. This is true whether one is teaching arith- etic or history. To give purpose to a task lends it dignity with ildren as with adults. We like to feel that what we are doing of some consequence, at least that it is preparatory to some- ing else which is of some consequence. To study a problem r the sake of a grade or of pleasing the teacher is too trivial to ake the most effective appeal above the primary grades.

Pupils should be put into challenging situations. Much of e schoolroom activity should have as its object the training of upils to think. The mere acquisition of facts is not enough nd is generally of little or no value in itself. It is when we tilize those facts in adjusting ourselves effectively that they ave significance. But if we are ever to utilize them fully we ust learn to do so in the schoolroom. The teacher in preparing er lesson should ask herself, What questions can I prepare

which will offer my pupils the greatest stimulus for thinkin
If the pupils have reflected seriously upon a matter that
worth while, the day is not lost, even though the lesson has n
been covered.

**Formalism of program often interferes with teaching pup
to think.** Unless the teacher is careful in the organization of l
work, the program of procedure, demanding as it often does th
the teacher be at a given page and chapter at a stated perio
prevents a maximum of thinking by the pupils. The teache
attention is centered upon the material and the orderliness a
rate of its presentation rather than upon its effect on the pupi
Although it is necessary from the point of view of school a
ministration to have programs and to cover certain materia
during a stated period, the classroom teacher must be caref
not to let programs become ends. He must not become a sla
to the subject, but instead, as far as possible, let the nee
of the pupils guide. No one needs more than the classroo
teacher to be constantly on the alert lest adherence to for
devitalize the worth of the procedure. The form itself is but
device for the furtherance of desirable outcomes and hence
times should be pushed aside or modified. What is happeni
to the pupils is, after all, our only concern.

Indefiniteness on part of teachers interferes with thinkin
The teacher must, by preparing situations and asking goo
questions, cause the pupils to relate and compare. If he is
do this, however, he must as a beginning teacher prepare a
organize his questions carefully. Later he may with safe
formulate his questions as he proceeds. At all events the que
tions must be definite if they are to produce the best thinki
by the pupils. The following are examples of indefinite que
tions: What do you observe about this specimen? What
we know about Abraham Lincoln? The pupils must guess
answering a question of this type. Their attention is n
directed upon any definite point, and hence they are not bei

pperly stimulated. Questions are often made indefinite by ps in the teacher's wording. For example, the teacher in estioning a class in geometry asks that the pupils compare rtain angles, when he means triangles. This slip throws the pils into a state of confusion and breaks up the thought ocesses, if any are started. The teacher who finds himself ling at this point should immediately set about schooling mself to deliberateness. Haste is not conducive to good think- g, and the teacher should not allow other considerations to terfere seriously with deliberation when teaching the pupils think.

Questions and problems are often indefinite because of the mbiguity of their wording or because words are used which ve little or no meaning for the pupils. The following is a t of ambiguous questions and problems:

1. If in mountain climbing one finds that since he left the base the mperature has fallen 20 degrees, what is his approximate altitude if he gan at 1000 feet above sea level? (It is not stated whether the de- es are Fahrenheit or Centigrade.)
2. What is the capacity of a receptacle the diameter of which is feet and the height of which is 15 feet? (It is not stated whether the pacity is wanted in terms of cubic feet, or liquid or dry measure.)
3. If he knew his forces were in bad condition, why did General Grant lay the attack? (There may be confusion as to whose forces are ant.)
4. Compare the St. Lawrence and the Mississippi valleys. (The respect which they are to be compared should be mentioned.)

In the following list of questions and problems indefiniteness mes from the use of words likely to be unfamiliar to members the class:

What in your judgment is the most important criterion for deter- ning economic depression? (It would be necessary in many high- hool classes to define the word criterion or substitute for the phrase riterion for determining" the more common phrase "means of asuring.")

What in your judgment were the most salient features of Prem
MacDonald's introductory speech before the British Parliamen
(Salient is not a commonly used word. Either its meaning should
taught or a synonym should be used.)

We are not suggesting that new words should not be intr
duced into the vocabulary. On the contrary, the teacher shou
make a conscious effort to increase the pupils' understandi
and use of words. He must be careful, however, in introduci
them that they shall not obscure his meaning in asking qu
tions or proposing problems for solution. Time will often
saved by taking a few minutes from the class period to expla
the meaning of technical or otherwise unusual words.

Leading and suggestive questions confuse thinking. Begi
ning teachers often make the mistake of using leading and su
gestive questions for the purpose of stimulating thought. Th
form generally takes the thought-provoking qualities out of t
questions. The following will serve as examples:

Why was Napoleon a greater general than Cæsar?
Why is the American form of government better than the Englis

These questions tend to build up a conviction previous to
flecting upon the problem. The pupil then begins marshali
evidence for the purpose of defending that which he has nev
carefully examined. The result is not only poor classroo
thinking but the building up of mental habits that will handic
the pupils in later life.

Giving pupils time to reflect after asking question. It tak
a certain amount of time for the pupils to get the significance
a problem and bring their experience to bear upon it. T
teacher who calls upon a pupil to answer immediately after t
question is asked makes reflective thinking almost impossib
Then, too, many of the pupils feel that the burden of thinking
removed, and either relax or turn their attention to mischi
There is little incentive to downright thinking.

Attitude of teacher affects reflection. The teacher, to get the st results, should at least take the attitude of one thinking th his pupils. The question should be asked slowly and with parent deliberation. The teacher may ask the question in ch a manner that the pupil feels that it is of little importance, erely a problem for pupils to think about. "I wonder," with phasis upon "wonder," will tend to have the effect of making eal problem out of the question. Of course, the teacher must careful not to overwork this particular expression. One may, pending upon the question, substitute for it such expressions "Do you see how?" "Do you think?" "Why?" "Do you the reason for?"

Questions should grow naturally out of the discussion. The acher may have prepared the question in advance (the begin- ng teacher, we have said, should prepare at least the main es); but when asked, the question should not appear ready- ade. There should be sequence and naturalness about the estions. The student teacher may learn very quickly to ask od questions but be a long time in giving the sequence of his estions that grace of naturalness which does not call atten- n to the device itself. The questions and problems blend oothly into the fabric of the lesson. One of the most charac- ristic things about the performance of beginning teachers is e intellectual jerkiness that is caused by their questioning. he following suggestions will aid in overcoming this defect:

1. Center questions round big topics.
2. Carefully prepare main questions.
3. Give pupils plenty of time for reaction.
4. Call for many points of view upon one topic.

Questions should not be closed too soon or with an air of ality. Many teachers make the mistake of drawing the dis- ssion to a close too soon and with an air of finality. If the pics selected for discussion are important—and they should

be—the teacher can afford the time to get points of view fr many members of the class. The discussions by the pup should not be left in the fragmentary manner in which they m have been contributed, but should be brought together by t teacher and focused upon the problem. Otherwise the pup will get only the benefit of the individual discussions; they w not see the discussions functioning in their totality upon t problem at hand.

With respect to the individual recitation, the pupil who h the floor should be encouraged to continue until he has, if po sible, made a significant contribution to the discussion. T teacher whom I am observing as I write these lines has prepar very good questions but is making the mistake of not encoura ing pupils to carry on prolonged discussions. The pupil w raises his hand is given the floor at once or as soon as the pu who is reciting halts in his discussion. This method is havi a demoralizing effect upon an exceptionally good class.

Timid pupils especially should be encouraged to take part discussions. The teacher is likely to forget, in the heat of l activities, the timid pupil who does not volunteer. Such pupi when tested, often show that they have mastered the assig ment and would have made valuable contributions to the cla room discussion. When the timid pupil does recite or ta part in a discussion, the teacher must be careful to give h special encouragement and refrain from comments that tend belittle his contribution. If there are objections to his discu sion, other members of the class will detect them; or, if not, t teacher can point them out later. However, before this should have commented favorably upon the good points. T writer recalls the practice of a favorite teacher, W. S. Gray, w invariably commented on all the good points he could fi before presenting the defects. After a conference with Gray o felt at least able to do something. The problem of "drawi out" the timid pupil is a real one and will tax all the resourc

at even the most experienced teacher can master. The fol-wing suggestions will be helpful:

1. Observe the timid pupil's expression after the question is presented d call upon him when there is evidence that he is provoked into think-g and has a contribution to make.
2. Give dignified consideration to the pupil's comments and discussion.
3. Make favorable comment upon his successes.
4. Assign special tasks, as reports, which will tend to give the pupil nfidence in himself.
5. Become acquainted with the pupil, getting him to talk about the ings of which he has special knowledge; his radio, for example.

Teacher should be nonpartisan in discussions and keep at all mes the attitude of suspended judgment. One of the pitfalls the pathway of the beginning teacher is that of being dragged to an argument with one or more of the members of the class. ot only is this undignified, but it also tends to undermine ecessary qualities of efficient thinking: unemotionally weigh-g evidence, holding suspended judgment, and willingness to arn the other man's point of view. It tends to give an air f finality to the conclusions reached. One may reach conclu-ons on the basis of the evidence at hand and yet be very con-cious of the fact that his judgment may be wrong; that lack of ll the evidence or a peculiar personal bias may color his think-g. So it is well to conclude with sentences beginning with such xpressions as "It looks as if," "Considering the evidence," In our judgment." These attitudes are necessary in life.

The attitude of suspended judgment on the part of the pupils ill be considerably enhanced by such an attitude on the part of he teacher. The teacher who is trying to get pupils to think hould not pose as an authority but rather leave the impression f one who is himself struggling to settle the problem in hand, iving careful attention to all suggestions, immature as some f them may be. The attitude of respect for an honest effort ill do much to encourage thinking.

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LESSON XXXVIII

im. To appreciate the question as a mental device and to become more efficient in the art of questioning.

For the most part questions should challenge thought and ot mere memory. They should test the pupil's knowledge indirectly rather than directly. By testing his ability to use facts e teacher can determine whether or not the pupil is in possesion of the facts. If the discussion provoked by the teacher's uestions indicates that a given pupil is not in possession of the cts, then the teacher may ask for a statement of the facts as ven by the text or other sources which the pupils are supposed have studied. Futhermore, he can do this without making e class feel that his main object is to determine the extent which they have been dutiful in performing assigned tasks. he following represent factual questions on the Peninsular mpaign of the Civil War:

1. Who led the Union army?
2. Who led the Confederate army?
3. How many men did McClellan have?
4. How many men did Lee have?
5. Describe the landing on the peninsula.
6. How many days did the campaign last?

The following are examples of thought-provoking questions hich will test the pupil's knowledge of the facts through testg his ability to use those facts:

1. I wonder why McClellan decided to attack Richmond by way of e peninsula?

Many reasons will be given by the pupils for this decision, many of hich will be sound. Some will be faulty, because of inadequate knowlge of the facts. As these occur the teacher should call upon the class

for the facts. If the class does not know the facts and they are not be found in the text, the teacher may supply then and there those need for going on with the solution of the problem.

2. What do you think would have been the effect upon the war Richmond had been captured at this time?

This question will test many more facts which the pupils who ha studied well will have at their command.

Not only will the latter questions test the pupil's knowled of facts and his ability to utilize them, but they will emphasi also the important points in the lesson. They focalize, an hence help to organize, the various threads of thought into thought fabric. The pupils leave such a lesson with a few in portant thoughts in mind rather than with a mass of details tha will soon drop out of memory. The details themselves, s psychology tells us, are more likely to remain with us if use in some organization. The important facts are made to stan out as they should; but they are supported by related detaile facts, insignificant in themselves, but often weighty when mad a part of an organized group of facts.

Questions should be prepared with a view to pupil's expe rience. It must be remembered that the question which wi provoke thought in the mind of the teacher will not necessaril do so in the mind of the pupil. It will do so only in case th pupil's experience is adequate. To ask why the football tean did not win the game on the previous Saturday would be likel to result in much thoughtful discussion, but to ask why th word "Ideas" is capitalized in a reference to Plato would ver likely result in no discussion at all. On the other hand, th question should not be so simple as to provoke only disgust. T quote Foster, "The question must be real for the person t whom it is addressed."

Clearness as a criterion of a good question. It is a commo observation of those who make a practice of visiting classes tha the teacher's questions are often so ambiguous that a guessin

ntest ensues on the part of the pupils as to what the teacher
ants. It is no easy matter to prepare questions so that they
ill always be clear to the student, but much of the failure lies
the fact that the teacher seldom makes any great effort to
epare clear questions. While preparing these questions he
ust put himself at times in the place of the pupils, attempting
discover reasons why the questions might prove ambiguous.
erhaps he has used words that are not in the pupils' vocabu-
ry. Maybe the antecedents of certain pronouns are indefinite.
erhaps certain expressions which have clear and definite mean-
g for the teacher because of his momentary ideational back-
ound will be perfectly meaningless when presented to the class
the following day. Such directions as "Classify angles," for
ample, may mean for the teacher classification according to
e size. The question is not complete until he states how he
ants the angles classified.

Questions are of three types. At this point the student
acher's attention should be directed to the fact that questions
ay be divided into three types: factual, developmental, and
rill questions. We have discussed the first two. The drill
uestion, like the factual question, should not require delibera-
on on the part of the pupil. Hence it is not as difficult to pre-
are as is the thought-provoking question. After the teacher
as determined the bond which he wishes to form, it is only a
atter of asking the drill question frequently enough and at
tervals properly timed. That is, the question should recur
ntil the response can be made instantly. The distribution of
me in giving it is an important consideration. Rather than
sk question 1 over and over again, having different members
f the class answer, it is better to insert questions 2, 3, 4, 5,
, 7, etc. between 1 and its recurrence.

Manner of presenting questions. We have discussed the prep-
ration of the question; we are now to consider the manner of
resenting it. Owing to the fact that many teachers have in

mind the lesson rather than the needs of the pupils, questio
are often asked in such a hasty manner that the words are n
properly enunciated and the pupils do not understand. The
too, the teacher may be in such a hurry to get to question
that question 1 is neither fully discussed nor comprehended.

The need for haste in presenting thought-provoking questio
is probably the result of failure to prepare the questions pro
erly. If questions are organized with a view to leading t
thoughts of the pupils, fewer of them will be required than
prepared merely for the purpose of testing the pupils' know
edge of facts. The quality and inflections of the teacher's voi
are important. The question should be asked slowly and wi
apparent deliberation. The pupils like to feel that the teacher
thinking, too. The accenting of the question determines in a mea
ure the extent to which it will provoke thinking. If in asking t
question "I wonder why the battle of Saratoga is consider
one of the decisive battles of history?" the teacher accents t
word "why," the question is more effective than otherwise.

A bad habit formed by many teachers is that of repeating t
pupil's answer or replying to each answer with an "All right
Such a response by the teacher puts the pupil in the attitude
one being questioned rather than that of one of a group whi
is striving to discover new thought. The class should be e
couraged to weigh what is said. The teacher's confirmation
rejection of the response as soon as it is made is often likely
close the discussion.

The following represents ineffectual and effectual methods
questioning, as far as the stimulating of thought is concerned

INEFFECTUAL METHOD

Teacher. When was the battle of Antietam fought? Mary.
Mary. September 17, 1862.
T. Who was in command of the Union army? John.
John. McClellan.

T. Who was in command of the Confederate army? James.

James. Lee.

T. Describe the battle. Robert.

Robert. The battle began on September 16 with a heavy artillery uel. While this was going on Hooker attacked Lee's left wing. At unrise on the following day Hooker opened his cannon upon Lee's left nder Jackson. Hooker for a while pressed Jackson back, but Jackson eceived fresh troops and for a time it looked as though Hooker would e driven from his position. Hooker was wounded. Then Sumner rossed the creek and threw his corps into the contest. The left and enter did not do anything until afternoon, when they attacked the nemy. The battle was a draw, and Lee escaped across the Potomac luring the night.

T. How many men were lost? Robert.

Robert. McClellan lost 12,640 men, and Lee lost about 11,000 men.

T. Did McClellan pursue Lee immediately? Grace.

Grace. No. He waited five weeks.

T. What did Lincoln think of this? Mildred.

Mildred. Lincoln was impatient and wanted McClellan to follow Lee up at once, but McClellan did not think himself ready.

T. What happened to McClellan? Charles.

Charles. McClellan was relieved of command on November 5.

T. What event happened September 22? Edna.

Edna. Lincoln issued his preliminary emancipation proclamation.

T. What was this proclamation? Howard.

Howard. It declared that the slaves in all the states or parts of states that were in rebellion against the government on the first of January, 1863, should be forever free.

EFFECTUAL METHOD

Teacher. What in your judgment was the greatest weakness of McClellan as a general? Mary.

Mary. His slowness in preparing for an attack. He wished to be so sure that nothing was wanting that he often lost opportunity to attack at the most favorable time. Had he followed up Lee immediately after the battle of Antietam he might have captured or destroyed Lee's army.

T. What were his strong points?

Mary. His plans were always perfectly laid. He was the safest general the North had in the sense that he was least likely to become trapped.

T. Do you consider that this offset his weakness? Would you hav continued to use him as a leading general, had you been in Lincoln place? John.

John. I don't believe I would. He seemed to plan his campaigns a though he were following a book of directions. Although it is true tha he was safe, he did not follow up his advantage because everything wa not in perfect order. He did not seem to be willing to act upon th information that the enemy was even worse off than he. For example he must have known something of the condition of Lee's army after th battle of Antietam; yet because he was not perfectly organized an equipped he waited for five weeks, meantime giving the enemy tim to prepare.

T. [James has raised his hand.] James.

James. Lincoln had the people to satisfy, and McClellan ignored th impatience of the public. He had his ideals of a perfect campaign an refused to change.

T. Then you would say that McClellan was a "paper" general; tha is, he could outline a campaign perfectly, but he failed upon the fiel of action.

Pupils. Yes.

T. Why did Lincoln wait until after the battle of Antietam to issu his preliminary emancipation proclamation? Robert.

Robert. Lincoln wanted at heart to free the slaves but was afraid tha such a move might cause too many enemies in the North. Not every body in the North wanted the slaves free. Northern Democrats wer fighting only to save the Union. Hence Lincoln wanted some decisiv victory before issuing his proclamation.

T. But Antietam was a drawn battle, was it not?

Robert. Yes, but it put an end to an attempted invasion of the North and hence caused the people to take courage and have greater faith i the administration.

T. What evidence have you that Lincoln did not act any too cau tiously in issuing the proclamation? Grace.

Grace. A new Congress was elected about six weeks after the pre liminary proclamation, and the Democrats showed great gains.

T. What advantages do you see in the freeing of the slaves at thi time? Mildred.

Mildred. The South was getting much help from the negroes on th plantations; and, of course, this proclamation would tend to make th negroes disloyal and would also tend to demoralize the Southern people

any of whom would probably rather return to the Union than risk the ss of the slaves.

T. Do you see any other advantage? Charles.

Charles. Many European countries changed their attitude as soon as was found out that the North was fighting for the freedom of the aves. This was especially true in the case of England.

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LESSON XXXIX

Aim. *To become efficient in teaching pupils how to study.*

Teaching pupils to help themselves. Teachers, in their anx iety to forge ahead into the subject matter, often forget th needs of those whom they are instructing. Pupils should grad ually be taught to help themselves. The pupil who has reache the high school and is unable to use a dictionary or Reader' Guide properly, or who has no standards for the weighing o authority, or who reads at one half his possible rate, or wh has no place-and-time study habits, is incapable of doing goo work. Growth in initiative and self-confidence is impossible He may have amassed a great wealth of information from as signed readings, etc., but he has not learned to collect, weigh and consider evidence for himself. He has reached a give destination but has not learned to walk.

Although as an abstract principle the teaching of pupils t help themselves is one to which all would agree, the task o creating such teaching situations as will result in self-help i difficult, and only the master teacher can accomplish it in full However, the beginning teacher can do much. And with thi in mind we shall attempt to make suggestions that will b profitable.

Providing for proper physical background. In working ou Lesson XI the student teacher was asked to observe the physi cal condition of each pupil. The information gained at tha point should be of use here. It is difficult for a pupil suffer ing from adenoids to do his best intellectual work. Likewis the pupil who cannot see well or who has difficulty in hearin will be at a disadvantage. Such pupils should be discovered an

s far as possible should have their physical needs attended to. t was a matter of common belief at one time that the mind was something incased within the body for safe-keeping and that he ideal student was one who neglected the case and attended to mental needs only. Modern psychology has brought o light the error that lay in the background of such a concept f a human being. We react not as a mind in a case but as a nitary organism. We, as teachers, must therefore lay the basis or effective study by providing, if possible, the proper physical background.

Holding pupils responsible for definite assignments. Although, s we have suggested before in this text, assignments should eave opportunity for initiative, there should be a certain minimum for which the pupil is held to strict accountability. Check ests that are easily graded should be given often, covering both ssignments and material developed in class. These tests have he advantage of holding the pupils to something definite. The eacher is often amazed by the ingenuity of the bright pupil who as not prepared his lesson and who intends to rely upon bluffng. In ordinary tests he can often so word his replies as to vade the point. A teacher reading such a pupil's test paper annot always tell whether he knows the matter or not, but in ncertainty gives him at least a passing grade. If a pupil is eld to the response "true" or "false," there will be less quesion in the mind of the teacher (allowing for a fifty-fifty chance y subtracting wrongs from rights for score) as to where he pupil stands. Under such conditions the pupils are forced o read carefully and conclude with a few things definitely mastered.

Assign problems rather than pages. The pupil who has a problem to solve goes to his books with a definite purpose in mind—the solution of the problem. He is more likely to pass ightly over that which is not pertinent to the solution and to concentrate upon that which is. The teacher should therefore

make the assignment as a problem or series of problems. Thes should be discussed briefly by the teacher for the purpose of de veloping interest in them. A few well-chosen questions are use ful. The student teacher at this point should turn back to Lesso Plan (Form A), pp. 265–269, and study the lesson assignmen with a view to its fitness for developing the ability to study.

In class discussions hold pupils for significant points only The teacher who lays stress in class upon irrelevant points i doing much to unfit pupils for efficient study. The writer i listening to a recitation in history recently heard this questio asked, "What were the names of the attorneys who defende the accused?" The pupils had not noted this fact, and th teacher supplied the names. In discussing the recitation late the teacher defended the question on the ground that thes attorneys later became famous men in American history. How ever, she had left the impression with the pupils that they ha failed on an important matter. Such emphasis is misplaced.

Give proper rewards for successful study. The younger pupil especially need immediate rewards for effort. To let a pupi make an effective preparation and give him no opportunity t use that preparation or no credit for it is to neglect the *law o effect* in learning. Likewise, to give credit for prolonged an attenuated effort is to utilize the *law of effect* in obtainin something not wanted. Once in a while a pupil will be foun who will say, "I read my lesson over five times and I don't se why I failed." Such a pupil should be told that the trouble i probably owing to the fact that he did not really read it once that he merely read the *words* five times. On the other hand, h who gets the lesson with one or two readings should be warmly complimented.

Some class periods should be utilized as study periods. I case there are no supervised study periods the teacher can d something to improve methods of studying by utilizing a recita

ion period or part of a recitation period now and then for the urpose of supervised study. Of course, such plans must first e accepted by the supervisor. During the period of study the eacher should announce a problem and have the pupils read vith its solution in mind. A short discussion of that which has een read will serve to show many where they have fallen short f efficiency in their reading. This is a good point at which to all pupils' attention to the importance of the heading of the opic and also to the topic sentences to be found in each para- raph. It will be found that many pupils consider one sentence s important as another. They have not yet learned that the opic sentence contains the gist of the thought and that the ther sentences have as their purpose the expansion or elabora- ion of the topic sentence.

The speed at which the pupils read during such periods of tudy may be increased by limiting the time. The writer in onducting reading classes for the purpose of increasing the rate as found it helpful in gauging the rate to watch the class as a vhole and call upon them to close their books as soon as two hirds of them are through, at the same time asking all to speed p a little and suggesting how. Ask them to keep their atten- ion upon the thoughts for which they are searching in problem olution. Drive for the main thought of a topic and read the est rapidly with the thought only of elaborating the main idea. Lessons of this sort conducted at intervals will be found very rofitable.

In helping pupils, teach rather than tell. There is a vast ifference between telling and teaching. The pupil who comes o the teacher for help is weakened by merely having his error ointed out to him or by being told point-blank the next step. The skillful teacher will ask questions that will lead the pupil o discover his error in procedure or the step that is to follow. The teacher must keep ever in mind the fact that he has a

twofold duty: namely, that of increasing the pupil's store o experience and that of developing habits leading to initiativ and self-reliance. By neglecting the latter we ultimately defea the former, and leave the pupil helpless when at graduation h is turned from the paternalistic atmosphere of the school int the merciless world of strife and competition.

Call for programs of study. The teacher should ask no only that programs of study be prepared by each pupil bu that a duplicate be made. This will prevent a few from report ing falsely that they have such a program. The pupil is mor likely to follow a written program than one merely thought out The teacher should examine these programs carefully, so as t be able to suggest points of improvement. In doing this h will have to use caution in order to be sure that he is no revising a program already made out with the aid of the prin cipal. However, with this precaution in mind he should si down with the pupil and revise his program where advisable In a case in which a pupil is failing in his work it is ofte advisable to talk with the parents about the rigidity with whic he follows his program. Such discussions will often reveal glar ing discrepancies between the program for home study and th activities of the pupil. Parents will in general gladly assist i holding the pupil to a program of study.

Give list of directions for study. The following list of sug gestions for study, compiled by the writer, may be used:

SUGGESTIONS FOR STUDY

A. Keeping Fit

1. Get plenty of sleep.
2. Take regular exercise.
3. If previously you have been doing heavy manual labor, graduall adjust yourself to the lighter diet of the student.
4. Eat a light lunch if you expect to study or attend class during th early part of the afternoon.

B. Making Physical Adjustments for Study

5. Make a program of work, giving time and place of study.

6. Select as a place of study a comfortable room, one in which interption will be least likely.

7. Have study room well equipped with all the materials needed. he room should be well lighted, heated, and ventilated. Pictures and ther articles in the room should not be such as easily to lead the mind way from studying. A baseball bat in the corner is sometimes too uch for a boy.

8. If possible, study alone, that is, with nobody else in the room. here is no such thing as studying with others.

9. Arrange program so as to study each lesson as soon as possible fter assignment is made.

10. If you can, study your lesson at two different times; that is, study it t night and review it in the morning before going to class (F. M. Giles).

11. Follow your program vigorously (use James's laws in building up abits).

12. When the study hour arrives, allow nothing to interfere with the usiness at hand. If an unpleasant task is to be done, it is easy to find nany other things that need doing badly. Do not let yourself be deeived. Go to your study, sit down at your desk, and pick up your book r pencil. The hardest part is over; studying will follow.

13. Be sure that you are physically ready to study. To have to interupt your work to adjust a window shade, get a drink, wash your hands, r sharpen a pencil often means the loss of the remainder of the study eriod. Getting ready, however, must not be so elaborate as to interfere vith suggestion 12.

14. Be sure to wear glasses if you need them.

15. Do not be afraid to take as relaxing a position as is compatible vith the work you are doing. Research by Dr. E. E. Jones justifies this tatement.

16. Give friends due warning that certain hours belong to your study nd request them not to interrupt you.

C. Making Attack upon Lesson

17. Understand the lesson assignment. Learn to take notes on the uggestions given by the teacher when the lesson is assigned. Take down ccurately any references given by the teacher. Should a reference be

of special importance, star it so that you may find it readily. Pick o the important topics of the lesson before beginning your study. (T University of Chicago High School.)

18. Read over the lesson as a whole, then try to pick out the i portant points in each paragraph. A well-written paragraph has o topic. Do not try to learn everything in the lesson, but pick out t chief things and relate the minor topics to them. It is a good plan [wh using one's own book] to underscore the most important sentence each paragraph. But don't underscore four of five sentences. Too mu underscoring is worse than none.

Then, having closed your book, try to give the most important fac about these topics aloud, or write out the material on paper. Do n open your book for help if you cannot recall a topic. Do the best y can until you have been over the whole lesson. Then open your bo and see what you have failed to recall. (F. M. Giles.)

19. When possible make practical applications of what you have learne

20. In the proper use of a textbook the following devices will be hel ful: index, appendix, footnotes, maps, illustrations, vocabulary. Lea to use your textbook, as doing so will help you to use other book Therefore understand the purpose of the devices named above and u them freely. (The University of Chicago High School.)

21. Carefully review and think over the previous lesson before b ginning the next (Hall-Quest).

22. Connect important facts of the new lesson with the facts prev ously learned (Hall-Quest).

23. Make comparisons and contrasts when possible (Hall-Quest).

24. When you interrupt work, not only stop at a natural break b also leave a cue for its quick resumption (Whipple).

25. After intensive application, especially to new material, pause f a time and let your mind lie fallow before taking up anything el (Whipple).

26. Form the habit of working out your own concrete examples all general rules and principles (Whipple).

27. Do not hesitate to commit to memory verbatim such materials definitions of technical terms, formulas, dates and outlines, always pr vided, of course, that you also understand them (Whipple).

28. Whenever your desire is to master material that is at all extensi and complex, make an outline of it. If you also wish to retain th material, commit your outline to memory. (Whipple.)

29. Take the mastery attitude. Do not let points go by you uncomrehended. If in class, insist upon an explanation. You are not attendg school for your health.

30. Study intensely while at it and then throw it all off your mind and et your recreation. It is easy to fall into the habit of dillydallying and ending hours where minutes will do. Remember, thoughts flow rapidly, nd in general the rapid workers are the most accurate.

31. Make up your mind that you *can* learn. It has been found from xperience that when people have the "will to learn" the mind will work uch more effectually. Do not say: "I can't learn it. I am not inerested in it." When you take this attitude it is almost impossible to o successful work.

D. Suggestions with Special Application to Memory

32. When the material to be learned by heart presents no obvious ational associations, it is perfectly legitimate to invent some artificial cheme for learning and recalling it (Whipple).

33. In committing to memory a poem, declamation, or oration, do not reak it up into parts but learn it as a whole. In finishing, however, one hould pay special attention to parts that offer difficulty.

34. In committing to memory, it is better to read aloud than to read lently, and better to read rapidly than slowly (Whipple).

35. If your work includes attendance at lectures, take a moderate mount of notes during the lectures, using a system of abbreviations, nd rewrite these notes daily, amplified into a reasonably compendious utline (Whipple).

Age and experience of pupils should be taken into account in reparing lists of suggestions for study. It is evident that such list of suggestions as the foregoing, if put in its entirety into he hands of even high-school pupils, would be confusing and of ttle use. It would be much more effective to introduce these uggestions in, say, groups of four, giving plenty of opportunity o utilize one group of suggestions before introducing another. A few of the suggestions in their present form would be useless o grade-school pupils. When used in the lower grades they hould be translated by the teacher into terms and phrases that will be more intelligible to the pupils. Other suggestions would

be useless in the lower grades even though put into the simples possible language before giving them to the pupil.

Directions for study should take subject matter into accoun The teacher, in the preparation of suggestions for studying should consider the subject matter that is to be learned. A times this will necessitate a reorganization of the suggestions i terms of the subject taught. Suggestion 18, for example, wi have more bearing upon history than upon mathematics whereas suggestion 27 will be more significant in the study o mathematics than of history.

Suggestions for study should be given a few at a time an practiced as given. As is indicated above, it is wasted effor to hand out a list of suggestions for study without attendin further to the process of translating them into habits. In th first place, a long list of suggestions is confusing and formidabl to even the adult, and much more so to the child. The sugges tions have been prepared in groups of four on the assumptio that four are enough to work on during any given period. Henc we would suggest that the teacher give out the directions fou at a time and make an effort subsequently to see that the function.

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LESSON XL

Aim. *To become efficient in developing initiative and responsibility.*

Relation between initiative and ability. No amount of abilit to think or execute is of much value unless accompanied b initiative. Too often we prepare for the first and neglect th latter. We assume that to know how will suffice, and at thi point we fail. To have the background of training for accom plishment is one thing; to have the initiative and drive tha make this background of value is quite another. And probabl one is about as much the result of training as is the other. It i no uncommon experience to find the oldest of a family possess ing initiative and drive and the youngest, who was "babied, more or less a "baby" though an adult. There are principle behind the training for initiative as behind any other forn of training. These principles cannot be seriously violated fo any length of time without permanent injury to the individua In dealing with pupils we must keep ever in mind the matter o initiative. The reactions in this field are among the mos fundamental.

Lesson assignments should leave room for special contribu tions, which should receive considerable credit. In general th assignment should take the form of a series of problems wit accompanying suggestions for their solution. These suggestion should tend to arouse the pupil's interest and carry him ove the most serious difficulties that he will encounter. Extr sources of material should be suggested, to which those whos time and inclination permit may go for further study. Th pupil who does reading beyond that definitely assigned shoul

e asked to give the class the benefit of a report on it. Likewise he pupil who in proving a theorem in geometry shows a differnt method from that found in the book should be given special pportunity to present it before the class. He should be requested also to try to find new ways of demonstrating other roblems. Problems worked by the class, with the teacher calling for suggestions from various members, will often start a upil on the road to action by giving him confidence in his bility to think. In other words, assignments should provide or initiative, and all evidence of it should result in reward for he pupils concerned.

Some responsibility should be placed upon pupils in all rades. The amount of responsibility that can be placed upon upils at any given age will depend in part upon the training hey have received and in part upon the seriousness of the task n which they are engaged. In dealing with young children the onsequences of failure to assume responsibility are often too reat to justify placing the burden upon them. Then, too, the young child is not likely to see the connection between his neglect and the result. Whenever he is given responsibility the result of his acceptance or failure to accept it should be clearly pointed out to him and emphasized by appropriate rewards or penalties, as the case may be. Mary left her scissors at home; therefore she cannot help the rest in paper cutting. Johnnie forgot to get a drink. This is not so easy to settle, as Johnnie may be very thirsty. To make him wait until school is dismissed would be a little harsh and perhaps prevent Johnnie from doing his best work. However, he should wait a while at least. The pupils who did not forget should be complimented at the same time. If the lesson is well taught, Johnnie will have been placed on the road to assuming responsibility. Although great care should be taken not to overdo the matter of teaching responsibility in the lower grades, the teacher should have the problem in mind at all times.

The positive side is more effective than the negative in usin criticism for the purpose of getting initiative and responsibilit The dean of the undergraduate school of an American universit has recently adopted the system of commending by mail thos who do work above a certain quality. Faculty and students ar much pleased with the results. The student who does things as human as his brother who fails. Along with commendatio for scholastic attainment pupils should be given responsibilitie of a monitorial nature and accorded the prestige that should g with such work. These positions should be so distributed tha all pupils get an opportunity to develop. The practice of givin them entirely to the best pupils has the detrimental possibilit of developing snobbishness at one extreme and a disrespect fo social organization at the other. The bright boy who, becaus of a wrong attitude, is behind in his work may be the one wh would profit most by being a monitor. Having succeeded in thi work and having felt the thrill of being respected, he migh make efforts for scholastic attainment. It is not uncommo for a good teacher to "wake a pupil up" in one field and fin improvement in all that he is doing.

As pupils become older, responsibility should increase an take on larger significance. Not only should the amount o responsibility given older pupils be greater, but its qualit should improve. To keep the high-school boy sitting at hi work thirsty because he had neglected to get a drink would b unpedagogical and have entirely the wrong effect. His responsi bilities should be in keeping with the dignity that should accom pany his age. To be made responsible, not primarily to th teacher but to the student body, for a part in a play is ver effective in teaching responsibility. The pupil feels more keenl under such circumstances the results of his neglect. In th first place, he has a personal interest in the project; and, in th second place, pressure exerted upon him by the group is fa more effective than anything that a mere teacher could possibl

ring to bear. It is a mistake in the upper grades and the high chool to make unimportant and formal demands upon a pupil, eglect of which is followed by what the pupil deems a punishnent by the teacher. The pupil, under such circumstances, gets he wrong attitude toward the tasks required; and little benefit, s far as developing responsibility is concerned, comes to him y fulfilling them.

Punishment should, as far as possible, be a natural consequence of failure to accept responsibility. That the punishment hould be such as naturally follows failure to accept responsibilty becomes truer and truer as the child approaches maturity. The young child may not have the experience or the social levelopment which is necessary for having a guilty conscience. Hence one cannot, in dealing with young children, look to this entirely as a deterrent to neglect and a spur to the acceptance of responsibility. The ability to feel social pressure, however, should be built up as rapidly as possible and as rapidly as it is built up should be utilized for the purpose of developing the ability to assume responsibility. It may be necessary in dealing with some young children to use teacher rather than social sanction, even to the extent of using physical correction in the form of spanking (see page 75).

Native ability a factor in background affecting extent to which a given pupil can take responsibility or assume initiative. In developing initiative or in training pupils for the acceptance of responsibility the teacher cannot neglect the factor of native capacity for reaction. One of the most discouraging characteristics of the mentally backward child is lack of capacity for feeling social approval or disapproval. In dealing with such pupils the teacher must act without one of the most powerful aids to which he has access in dealing with normal pupils. In dealing with brighter and more sensitive pupils, on the other hand, the teacher must be careful not to overwork social sanction in obtaining the desired reactions. Although it is true that

the amount of initiative and responsibility which can be take by a pupil will be limited by his native capacity and that ther will be periods of discouragement for the teacher, nevertheles the teacher should attempt to have each pupil exercise thes qualities as rapidly as his ability will permit. He must no expect an equal amount from all. There will be those, even i high school, whose capacity for initiative and responsibilit will never rise above that of the average child of twelve years For such a pupil ordinary social sanction will have much les appeal than for the normal pupil of high-school age. He is problem and may have to be dealt with by tactics suitable to hi mental age. Such tactics are often obnoxious to the group i which he is found, and the teacher will have to go as lightly a possible in using them and still get results. Such situations ta the teacher's ingenuity to the utmost.

Acceptance of responsibility and taking of initiative founde upon background of habit. One builds up patterns of reactio which result in the taking of initiative and the acceptance o responsibility as one builds up other habits; that is, through th laws of exercise and effect. One does not grow to maturity a an irresponsible being and suddenly find himself fitted for a posi tion involving responsibility. Such Arabian Nights transforma tions do not occur except in motion-picture land. The habit o taking the initiative must be encouraged, and when it occurs i a desirable form it must have a satisfying effect upon the in dividual. The satisfying effect is very important if the individ ual is to repeat the reaction more times than chance woul account for. The teacher must make conscious effort to see tha the situation is right for encouraging initiative and that th proper rewards follow its occurrence. Often the pupil who suc ceeds, following a guide, is warmly praised, whereas the one wh fails after a desperate attempt "on his own hook" is severel criticized. In general such a pupil should not receive destruc tive criticism but rather commendation and encouragement

The writer recalls the case of a young man who in solving his problems in analytic geometry seemed to disdain the suggestions of his text as a crutch for weaklings. He solved many of the problems entirely after his own fashion. That man is going out into this world to conquer. Not to notice or put a premium upon such work is to fail at one of the most important points in teaching.

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LESSON XLI

Aim. *To become as a teacher better able to develop in pupil the ability to execute.*

Teaching to execute constitutes large part of school program There is a sense in which every reaction is an act of execution In Lesson XXXVII we discussed teaching pupils to think The process of reflective thinking may be regarded as a proces of executing on the highest level. At the price of being somewha illogical we discuss in this lesson executing as something entirel different from thinking. It is impossible to distinguish clearl on any basis between thinking and acting. However, this fac need not bother the student teacher, since in everyday speec we speak of execution as action that can be observed. Ou material will include such subjects as reading, writing, funda mentals of arithmetic, spelling, drawing, and manual training Of course, some or much reflective thinking may accompany the study of such a subject as arithmetic, but the primary pur pose of these subjects is to develop speed and accuracy of re action. Our problem is therefore different from that whic primarily involves teaching the pupil to think.

Correctness of procedure first consideration in teaching pupi to execute. The process of execution on its neural side is on of energy passing over neural patterns and resulting in corre sponding muscular activity. It is evident, then, that this patter must be laid correctly from the start. By being laid correctl we mean that it must produce the desired result when a stimulu is applied and do so with a minimum of neural track. If, a we have said before, the stimulus 9×8 is given, the response 7 should follow immediately and not after saying the nines u

o 9 × 8. In other words, the patterns must be so laid that he proper stimulus met in the complex of a life situation will roduce the desired response with a minimum of effort. The eacher then will do well to look first to the correctness of the orm, which can rarely be too strongly insisted upon (see age 315).

Proper drill second consideration in teaching pupils to xecute. If the energy is to pass with accuracy over the given eural track which is most desirable in a given situation, that rack, when once accurately selected, must be exercised in such manner as thoroughly to break down synaptic resistance, llowing the energy discharged by the stimulus to function un-ampered in producing the proper reaction. This will call for onsiderable exercise of the patterns after they are laid. It will lso demand their exercise under varying conditions, to assure hat the functioning of the pattern is conditioned as little as ossible upon the setting of the stimulus. In other words, a upil should be able to use, say, his arithmetic in the complex of a life situation beyond the walls of the schoolhouse. To assure this transfer of training he must have exercised the estab-ished patterns in many situations similar to those in which he s expected to use them later. The pattern exercised in a well-carried-out project will be better prepared to function in a life situation than will a pattern exercised under formal and imaginary conditions. However, when exercising a reaction pattern largely under project conditions, one must be careful that the exercise is sufficient.

Will to accomplish important in developing ability to execute. The pupil should have some motive for exercising a given pattern while engaged in the activity. Studies in educational psychology point clearly to the fact that the will to learn is an important function in learning anything. Even drill of the most mechanical sort, such as learning the multiplication tables, should be supplied with a motive. The obtaining of genuine

motives will often tax the ingenuity of the teacher, but he mus if possible, provide the pupils with them. Contests, prizes, pleased teacher, need for use, are among the many possibl motives. Negative motives, such as punishments, are muc less effective and are undesirable from other points of view.

See that pupils center attention upon outcome in exercisin complex pattern of reaction. Although, as was said above, on must be assured if possible of perfect form from the beginnin (that is, the pattern which is being established must be perfec with respect to the units involved), the units should be brough into harmonious relation with one another through the exercis of the pattern with the attention centered upon the outcome In spelling, for example, one learns to spell the entire word a a word rather than as a series of syllables. One should learn also to write a word as a word rather than as a group of con nected letters. In reading one should focus attention upon significant phrases taken in at a glance. In learning to hit a baseball so as to drive it into a given part of the field, one does best by centering attention upon the part of the field into which he is to make the drive and accompanying this attention by seeing the process as a unit. The point is that one should gen erally keep the end in view during the process of exercising the neural pattern.

Elements of complex pattern of reaction should be developed in connection with largest unity possible without going beyond pupil's ability to execute readily. There is a point beyond which one should not drill upon the elemental units of a reaction but throw them into the higher unit of which they are to form a part, and drill upon them in this connection. The question that arises here concerns the size of the pattern which is to constitute the unit of reaction. This point need not concern the teacher very much, for it is determined by the responses that we must make to situations as they appear in life. In baseball one goes through a unitary complex of hitting the ball, and then

hrough another unitary process of running to first base. The ivision between the two is a natural one and is not likely to be verlooked. The following words of O'Shea are well to the oint here:

> As in linguistic symbols isolated letters have no value, so in vocal usic the individual note is practically without significance. But if the ovice be led at the outset to execute notes in isolation, giving them stinct individuality, they will come to occupy a more or less independ- nt place in consciousness. This simple law is familiar to all capable eachers of reading. The child who early is made to learn isolated tters tends to acquire a set in the direction of giving them independent alue, with the result that in his linguistic training he is likely to be andicapped in the effective use of words in the gaining of ideas. At the me time, when the pupil is first introduced to reading, he must often eal with separate words, because sentences may be too complex for eady comprehension. But he is not permitted to dwell upon the indi- idual words until they get a prominence which they will tend to keep ter on, when they really ought to lose their individuality. In the con- ciousness of a good reader, ninety-nine out of every one hundred words re simply dimly apprehended elements of some larger linguistic unity.[1]

May be necessary to select limited portion of neural pattern nd exercise it individually. As in learning a poem by the nethod of wholes rather than parts it is often necessary in nishing the work to give a little individual attention to some ifficult part, so in learning to execute a complex pattern of eaction it may often be necessary to drill separately upon some lement. Such special drill should be done separately from the egular performance in which the total pattern is used. For xample, phonetic drill should be conducted apart from the eading class. These unitary elements must not be neglected in xercising the total process. They must function perfectly if he more complex pattern is to function perfectly. The imper- ectly made letter detracts from the product of handwriting;

[1] M. V. O'Shea, Everyday Problems in Teaching, pp. 217–218. The Bobbs-Merrill Company.

and, although one should develop his handwriting mainl through written expression, it is often helpful to go back an drill upon a given letter individually. However, as we hav said above, the bulk of the drill should come in pattern units o a higher order.

Some elements should be drilled in connection with many pattern units. In learning to write, for example, the patter elements involved in making "o" as found in "boy," "not, "on," etc. are different. The making of the letter "o" mus therefore be drilled upon in the various type situations. Th neatness reaction should accompany many reactions, such a writing, figuring, making a bed, etc. To be assured of this, w have reason to believe that it will not suffice to drill for it i connection with, say, handwriting only. In dealing with thos unitary reactions that are themselves a part of many larger pat terns it is not enough thoroughly to drill upon the elementa pattern in connection with one encompassing pattern but i connection with several. In fact, it is necessary to drill upo the elemental pattern in connection with every pattern in whic it is to be expected to function as an integral part; that is with bonds between it and the elements which with it form th pattern unit.

Technique should be developed as means to an end, not a an end in itself. To keep the pupils for a long time exercisin patterns for the improvement of technique and at the same tim to give them no opportunity to utilize those patterns in the pro duction of the end for which they are being developed, produce a waning in the pupils' interest. The boy who is learning t play the violin is greatly encouraged and is given motive fo further practice if he is allowed to play simple pieces. He i thereby made to feel at all times the purpose of the practice It is not uncommon to see the novice for whom musical tech nique is an end and justification in itself. The teacher there fore should see to it that the pupil's practice of technique i

roperly motivated. This can be done, not through assurances hat some day he will use it, but as far as possible through aily use of it in producing something desired.

Distribution of exercise of neural patterns must conform to aws of economy in learning. Although experimental data on he question of the proper distribution of time in the process of ffectively laying any given pattern are still lacking, we can hake certain general suggestions that should be helpful in guid- ng the beginning teacher. In the first place, exercise should ontinue long enough to overcome the initial drag of inertia which accompanies the change from one form of exercise to nother. A certain warming-up period is required, during which he mental and physical phases of the organism are being re- djusted to the new activity. For example, one who has been ngaged in strenuous physical activity will need a few minutes or readjustment before attempting the finer coördinations used n handwriting. After these finer coördinations are attempted t will be some time before the organism is entirely adjusted to he new activity. And this will be true regardless of whether one begins handwriting after playing baseball or after reading history. Hence there is the warming-up period, the length of time for which will probably vary with the type of pattern to be drilled upon. This required period should be taken into ac- count in determining the minimum amount of time given to any drill period. The experimental evidence that is necessary for determining this period for the various subjects is not at hand; hence we can only caution the teacher in a general way to allow for it.

There is, on the other hand, a point beyond which diminishing returns make drill at any given period unprofitable, considering the time and effort involved. Again the teacher will have to determine this point by signs of fatigue, such as the thoughtless doing of the task at hand or nervous reactions. The whole prob- lem of spaced learning with respect to drill enters at this point.

How much time should elapse between periods of exercise mig
also be asked. Again all we can say is that there should
every sign that the pupils are fully recuperated. The teach
should observe for these signs, which are about the only gui
that we can offer him at present. Some day, we hope, educ
tional science will be able to direct him with precision.

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many valuable suggestions that will help to make teaching function
terms of behavior.

LESSON XLII

Aim. *To become able to measure the progress of pupils by means of standardized tests.*

The student will carry out this lesson by obtaining the available tests in his subject and selecting, with the aid of the critic teacher, the test or tests to be given. A booklet, "Bibliography of Tests for Use in Schools," may be obtained for ten cents from the World Book Company, Yonkers-on-Hudson, New York. This booklet contains a classified list of the tests available for each subject, together with the name of the publisher. Wherever possible, diagnostic tests should be used. The results of such tests serve to locate the causes of failure as well as the fact that failure exists. Hence diagnostic tests are more popular with teachers than other kinds and represent the type that will be used most frequently when the student takes charge of his own classroom later. To illustrate, Freeman's Chart for Diagnosing Faults in Handwriting is diagnostic, whereas Ayres's Measuring Scale for Handwriting is nondiagnostic or administrative in character. Hence, if handwriting is under consideration, the Freeman scale will be preferable as a teacher's choice to that of Ayres. Having given the Freeman handwriting scale, the teacher knows not only that the pupil's grade corresponds, let us say, to 60 on the Ayres scale but, further, why it is at 60. Perhaps it is largely a matter of letter slant or of letter formation. If so, he may proceed intelligently in the matter of correcting the difficulty.

Giving the test. The student should make thorough preparation for the test before attempting to give it to the pupils. This is a very important consideration, for a standardized test must

be given under stated conditions if the results are to be use in measuring progress. It is a good plan to give the test before hand to one's roommate or neighbor. If this is not practicabl give it in anticipation in one's study. Two or three repet tions should suffice. In general, the test should not be an nounced before the hour of giving it, as previous notice cause unnecessary tension on the part of most classes.

Utilization of test results. The test results must be studie with considerable care if the student is to obtain a maximum o information relative to individual and class needs. The fo lowing steps should be taken:

1. Compute median, or mean.
2. Compute deviation.
3. Compare results with test standard.
4. Make a graph showing individual results.
5. Formulate plans for overcoming the weakness that the tes reveals.
6. Submit the results and plans to the critic teacher for sug gestions as to further study and possible remedial measures.

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LESSON XLIII

Aim. *To understand the problems of examining and grading and to develop criteria for preparing effective examinations and for grading intelligently.*

Examinations serve to tone up class. Although it should be held as an ideal that pupils work for the subject itself and everything should be done to bring about this attitude on their part, the truth is that classes as we find them need to be spurred on by an occasional test. The teacher whose pupils seem indifferent will often find that the use of a test is stimulating. Pupils like the tangible evidence which an examination gives that something has been accomplished. And even if it may be true that the real outcomes are not tested, as in the case of appreciations and attitudes, nevertheless the fact that the pupil has discovered that he can answer certain questions and will be held in the future for others serves to give him courage and a goal. Examinations serve as a spur to the lazy pupil and as a source of satisfaction to the worker. Experienced teachers know the danger of letting a class go for weeks without a test.

Examinations should, in general, be frequent and of short duration. The ten-minute written exercise or oral quiz given with considerable frequency is to be preferred to the traditional hour-long test given at certain specified times. We are not referring here to the term or semester examinations. Those are certainly necessary for the best results especially under nonproject conditions. The scheduled examination periods tend to cause the pupils to let down in their work until just before the test and then to cram. The result of such procedure is demoralizing to the class.

Short examination should, in general, have no set time limit. Notwithstanding that we have used the term "ten-minute exercise" above, ten minutes is not always a desirable length of time for the written exercise. Much depends upon the nature of the problem. It is better to set only an approximate time limit, say about ten minutes or about fifteen minutes, and then observe the progress of the pupils as a means of determining just when to call for the papers. When about three fourths of the class are through, the direction "Finish as soon as you can now" will generally be all that is necessary for a rapid conclusion of the examination. If one or two lag unduly, the class as a whole may be told to turn in the papers.

To avoid waste of time, pupils when through in advance of the class should be encouraged to take up other work. It is better to do this than to force unduly a part of the class, especially if the test requires considerable organization of materials. It is not true that the best papers come in first, although this is frequently the case. The writer recalls a university student who required about double the time of the average member of the class in which to prepare his paper. But this student did not waste a moment of time. His examinations were perfect in thought and organization. The setting of an arbitrary time limit may take all the value out of a test for such a student. In giving tests on the information level, however, the problem is different, as the test partakes of the nature of drill, and here speed is one of the most important elements. It becomes one of the most important criteria of knowledge.

Tests generally should not be announced. The announcing of tests tends, in the first place, to encourage cramming and loafing instead of a constant-mastery attitude. If the tests are given unannounced and at irregular intervals, pupils soon learn to be prepared at all times by mastering the subject as they go. Hence pupils should learn to expect tests at any time. In the second place, many nervous pupils are often unduly "keyed

p" by the announcement of a test. It often happens that the upils who have the least cause for worry are just the ones to e most affected. This, of course, is a very undesirable condi- ion and one of the strong objections to the announcing of tests.

Examination outcomes. In general there are two examination utcomes, either or both of which may be sought by the one reparing the questions. He may make the examination a natter of merely testing the memory of the pupils by having hem give back facts learned, or he may make it of more value o the pupils by using it as an opportunity to organize and tilize the facts already mastered. The later form of examina- ion tests indirectly the pupil's knowledge of the facts. The difference between the two types of tests was well brought out n a discussion that followed the introduction of the examina- ion system into Purdue University. A study made by Dr. Stanley Coulter had shown that the giving of mid-semester examinations a few weeks previously had not materially changed the rating of pupils by the instructors. After the announcement of the fact a member of the faculty of the university asked why, then, waste the paper and the students' time. Dr. Coulter's reply was to the effect that all depended upon the nature of the examination. An examination that did not offer the student an opportunity to organize the semester's work and that did not stimulate him to intellectual effort was perhaps a waste of time.

There are occasions, however, when the teacher wishes to be sure that the pupils have a certain background of factual in- formation, and he does not wish to go through the roundabout method of testing facts through ability to organize and utilize them.

Use of check tests. Although a knowledge of facts and the acquirement of elementary skills are not in themselves objec- tives but rather means to ends, it is necessary that they reach a minimum level of perfection in order that they may function in larger and more significant settings. Hence the teacher should

sound out from time to time the extent to which they have been mastered. For this purpose the check test (see page 172) is of utmost importance. With it the teacher can determine with a minimum of effort both on his part and on the part of the pupils just what have been the factual and skilled accomplishments.

Preparation of check tests. Of the three types of check-test questions ("true-false," multiple-choice, and incomplete-sentence), the "true-false," although generally the most used, is the most difficult to prepare. It is often impossible to say without qualification that a statement is either true or false. And it is often unwise to put such a label upon a statement, though it is made by the author of the text being used. The teacher may say, "John Smith says so-and-so." This, in cases in which the truth is doubtful, is the most desirable thing to do. It is often difficult also to so word the statements that there can be no doubt as to their meaning. The writer has had the experience many times of preparing "true-false" questions that he thought could be answered as either true or false without any possibility of evasion, only to find that the class found plenty of opportunity to use the word "if." Hence the questions must be prepared with great care.

In general, check tests should not be announced. A large part of their value as an educational instrument lies in the fact that they hold the student accountable for the major facts of every lesson. It is for this reason, also, that they should be applied to all phases of instruction. It is very effective to insert statements dealing with material given by the teacher on the previous day or with an article given as outside reading. The pupil who wishes to stand high must attend to what is going on in class, to outside reading, etc. Of course he will discover the results of his negligence in the final examination, anyway. But the point is, this is too late; the short written exercise or the check test, if given from the beginning of the course, will stimulate from the first.

In preparing "true-false" tests the teacher should avoid in the long run an excess of true or false statements. If the pupils discover that the teacher prepares many more true than false statements, they will tend to take advantage of the fact and hence increase their score by increasing the chance of a correct guess where information is lacking.

Number of statements should be few. The attempt to get a long list of statements for the purpose of check testing leads to many badly prepared statements. Ease of grading demands that the number be such that the results can easily be transcribed to the scale of one hundred. All things considered, the teacher will find ten questions the most desirable. The pupils can be graded on the scale of ten for check tests throughout the term, and then the average or median can be transferred to the base of one hundred in getting the final grade.

William A. McCall[1] gives the following suggestions for making "true-false" tests:

1. Have approximately the same number of true and false statements and have them arranged in chance order.
2. Avoid ambiguous statements.
3. Avoid suggestive statements.
4. Avoid trivial statements lest they induce wrong habits of study.
5. Avoid use of negatives.
6. Make the statements brief.
7. See that one statement does not answer a preceding one.

Giving check tests. In general, the check tests should not be announced. On the contrary, the pupils should be made to feel that they are held responsible at all times for what is going on in class and for assignments.

It is desirable to use ruled paper of uniform size. This will enable the teacher to correct the work by placing a key paper along the side of the one to be corrected. In this way the speed

[1] How to Measure in Education, p. 126. The Macmillan Company. Reprinted by permission.

of correcting can be more than doubled. Cheap tablet paper cut into narrow strips serves very well. The pupils should be asked to number the lines, beginning at the top, from one to ten, if ten questions are given; after this the teacher will proceed to read the statements, the pupils writing "true" or "false" or + and - to indicate the correctness or incorrectness of the result. The statements should be read slowly and distinctly. A second reading of the statements should follow immediately. This time they should be read more rapidly. Not more than fifteen minutes should be consumed in giving a set of ten questions. The pupils should be so trained that when the last question is read in the second reading they will begin at once to pass the papers forward in some orderly manner. If the scheme of passing in papers is well worked out, the teacher may take up the class work immediately after the reading of the last question.

Scoring and utilizing results of check tests. If the tests have been given with a view to ease of grading, the results of even a large class can be scored in a few minutes. The papers should without fail be returned with the grade at the next meeting of the class. The average, or median, score should be computed and placed upon the board as the papers are being returned. The writer has found it desirable to have each pupil keep a graph of his grades and that of the average, or median, class grade.

The pupil who knows nothing about the subject matter on which he is being tested, but merely guesses at the truth or falsity of the statements in a well-constructed "true-false" test, will, on the average, get half of them right. One can eliminate this factor of choice by scoring rights minus wrongs. That is, if on a test of ten questions the pupil should by means of guess get only five right, the score rights minus wrongs $(5-5)$ will equal zero, or his knowledge of the subject as shown by the test. However, the purpose of ranking the pupils can be served

just as well by grading the pupils on the number right, ignoring the question of guessing, for pupil-grading should be largely a relative matter. But this latter method has educational drawbacks. The pupil who finds that by guessing he can average 50 per cent right, and by general knowledge or a little study answer two questions with assurance of their correctness, thus raising his grade to 70, is encouraged thereby in his indolence. On the other hand, if the pupil finds that guessing brings him an average grade of zero with an occasional negative grade, he notes that the gulf between him and the best members of the class is very large, and he is thereby stimulated to effort.

Essay tests. The check tests should be accompanied by tests of the essay type, so that the pupils may have the experience of organizing the material. Not all essay tests should consume all the period. Many of them should take no longer than the check test and, like the check test, should generally be unannounced. The pupils should learn to expect such a test on any phase of their class activity, such as assigned readings, classroom lectures, and class discussions.

Distribution of grades. Two sets of criteria determine the grades given a class. In the first place, the grade is determined, aided or unaided by established norms or standards, by the instructor's judgment of the absolute accomplishment. In the second place, the grade is determined by the relative accomplishment of the pupil as compared with that of the other members of the class. In general it is easier and safer to follow rather largely the second criterion. As teachers we are inclined to rationalize to the effect that ours is an exceptional class. We all feel a distinct pressure bearing upon us from without, insisting that we grade higher than our judgment warrants. This pressure is placed upon us by both pupils and parents. We do not like to disappoint others, especially when we know they have worked long and arduously. Combined with the error in grading likely to arise from this source is our tendency to recall

the good recitations and neglect the failures. This is because we are interested in those under our charge. There is no teacher worth while who will not take this attitude toward the class. However, this very human trait does not tend to accurate grading. It must be counteracted for this purpose by following out a principle of distribution known as the "Normal Curve."

Following the Normal Curve of distribution will be accurate enough for the purpose of grading in the lower grades, but because of the selection of the student body it will scarcely do for grades of high-school or college level (see Lesson XIII, p. 110). It is very probable here that a more just principle of distribution would be that represented by the upper half of the curve. That is, for the purposes of elementary schools, grades may be distributed according to the principle of the Normal Curve of distribution approximately as follows: A's, 7 per cent; B's, 18 per cent; C's, 50 per cent; D's, 18 per cent; and F's, 7 per cent. Using the upper half of the curve for purposes of high-school and college grading would give on this basis: A's, 14 per cent; B's, 36 per cent; and C's, 50 per cent. Such a use of the curve makes no allowance for failures. These, of course, will be taken from the C group if any occur, thus lowering the percentage of C's. Failures should be few in courses well adapted to the age and needs of the pupils.

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LESSON XLIV

Aim. *To understand the nature and purpose of supervision that the student as a teacher may coöperate with a supervisor in carrying out educational projects.*

Nature and meaning of supervision. It is difficult to illustrate the nature of ideal classroom supervision by reference to any other field of work. The supervisor is not a boss, and the teacher is not a mere instrumentality by means of which supervisors get things done. Both are, or should be, artists commanding great skill in carrying out educational principles that are equally understood by each. The work of each is a function of the work of the other in determining the success of either. Their common interest centers in the pupil, whose advancement determines alike their success or failure. Hence supervision means coöperation, the teacher being as much a party to the procedure as the supervisor. Ideally the teacher is not an inferior professionally, but in every sense of the word an equal. It may be true that, taking situations as we find them, supervisors, on the average, will be better trained. But it is equally true that not until teachers approach the status of supervisors in skill and understanding can supervision be at its best.

Supervision necessary even though teachers are highly trained and of long experience. Teacher-training rather tends to make supervision more effective than to eliminate the need of it. We have indicated above that only well-trained teachers are in a position to take full advantage of supervision. Others are incapable of carrying out fully their share of the coöperative undertaking involved in the process. Then, too, it is impossible for one to teach and to observe the process effectively at the

same time. The experienced teacher will recall with what uncertainty of their success he has often reviewed classes he has taught. In general the less experienced teacher will meet with the greater difficulty in this task of evaluating his work, but all will be at a disadvantage. How many times have I wished that I could observe my own teaching as it is seen by my students! I suspect that this is a common wish of every experienced teacher whose training has raised problems of pedagogy. The sympathetic supervisor supplies this need.

Appreciation of our work by another serves as a "drive" to greater effort. Another consideration is the fact that it is only human to be stimulated by the attention of others interested in our problem. This is one of the fundamental "human drives." We want others to see and appreciate. Hence it is little wonder that the teacher who works alone at his task, though he may be enthusiastic and improve for a while, finally gives up and enters the realm of pedagogical stagnation. How different it is with the teacher who through proper supervision is enabled to keep his youthful enthusiasm, always meeting and solving problems, always improving, and this with the assurance that growth may go on through life.

Supervisor is generally the only observer who can appreciate that which has pedagogical worth. Laymen who visit the school from time to time may praise or blame, but such praise or blame will not matter much to the teacher when he realizes their incapacity to evaluate teaching. Not so with the supervisor; he knows good teaching when he sees it. His reaction will be significant and at all times constructive. He is interested in the teacher's improvement, which is one with his own success as a supervisor.

Common background of educational theory necessary. The teacher must know the goals of education and be in agreement with the supervisor relative to those toward which effort is to be made. They must also be in mutual agreement as to ways

and means of attaining the goals desired. The reason for thi lies in the conception of supervision that we have outline above. Supervision is a coöperative undertaking in whic teacher and supervisor work as one for the purpose of improvin instruction. Hence they must necessarily be working at cross purposes if there is not a large common ground of agreemen with respect to educational objectives and methods.

There must be much professional reading on the part of both accompanied by discussions or conferences. There must be lively interest in new educational movements and theories, an a discussion of them. In such matters the teacher may wel take the initiative. The teacher who stands back waiting t be told what to read is by that token incapable of entering mos effectively into the coöperative task of supervision.

Teacher must free himself from false standards of success Many teachers are incapable of supervision because of fals standards of success which are the result of a wrong attitude This attitude is the result of one of two things. Many con scientious teachers are afraid that their work will not appea favorably when compared with that of others. Such teacher will listen to discussions and will read in the field of education but cannot bear the thought of supervision, which means tha a second party must enter the problem. A second cause for th negative attitude toward supervision lies in the individual' lack of ideals of teaching. Such individuals have their ideal elsewhere. It is not their greatest desire to be known as goo teachers or to think of themselves as good teachers. Thei position brings them a remuneration sufficient for their needs They go and return from the school much as a laboring ma goes to and returns from the factory—a day's work for a day' pay. Of course, such teachers will not care to work with super- visors. This means conferences, readings, experiments, discus- sions, and sometimes with no added recompense except th satisfaction that comes from improvement.

There is but one cure for either cause of negative attitudes oward supervision, and that is the taking of such interest in eaching that little else matters compared to genuine success n this field. The teacher must care more for ultimate success han for his momentary reputation. He must for the moment orget himself in his effort to succeed. It is not easy to build up such an attitude, but it must be present if supervision is to succeed completely.

No royal road to mastery of art of teaching. The old saying that teachers are born and not made is but a partial truth. It is true in the sense that the teacher must himself be an intellectually superior individual. But intellect alone never made a teacher and never will. The proper presentation of material for intellectual assimilation demands skill that can be attained only through years of effort. It is not enough that the teacher merely teach, for this may mean only the fixation of bad habits. He must consciously attempt to teach each lesson better than the one before. Carrying out this purpose will call for much reading, thought, and ingenuity on his part. If he is fortunate enough to be working with a supervisor, it will demand conferences in addition. It may also require his observation of other teachers. And above all and under any conditions it will require a receptive mind. This is a necessary prerequisite to all learning, and learning to teach is no exception to the rule.

Master teachers, like great painters and other true artists, find avenues for improvement opening up as experience progresses. A unique feature of our profession is the fact that as we proceed the vistas of opportunity for improvement seem to expand. And this is a blessing in one sense of the word at least, for the thrill in life seems to come from accomplishing rather than from having accomplished. It is *becoming* rather than *being* which gives satisfaction.

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LESSON XLV

Aim. To become able to rate oneself with a Rugg Rating Scale for Judging Teachers in Service and to profit by the analysis and rating.

Scales of two classes. In general we may divide all test and rating scales into two classes; namely, diagnostic and administrative. The former provides for a final summary of results, or rating, through analyzing each factor into its elements. It has the disadvantage of being laborious and slow, but the advantage of forcing one to ground his judgment in the elements behind the subjective and unanalyzed estimate. The greatest value of this scale lies in the possibility of self-improvement by the user. The administrative scale, because of the rapidity with which it can be used, has its greatest value in the hands of one interested merely in determining present status or in classifying. The Rugg Rating Scale combines both administrative and diagnostic features.

Through the kindness of Professor H. O. Rugg of Columbia University the author is able to include a copy of the Rugg Rating Scale for Judging Teachers in Service. The student will follow the directions carefully and, after making his scale, rate at least five other teachers and then himself. See page 412.

Correction of weakness found in oneself by means of Scale A. It does but little good to locate one's weaknesses if one does not immediately set about the process of correcting them. Such a process should be systematic. Merely to conclude that one is going to improve is useless. One not only must conclude that he is going to improve but must, at the same time, lay down a plan of improvement and systematically follow it out.

PURPOSES AND USE OF THE RATING FORMS FOR EITHE HIGH SCHOOL OR COLLEGE STUDENTS OR FOR TEACHERS

(The forms for I, the teacher, and II, the high school and college student, differ onl in content of the groups of qualities and definitional questions. Therefore, the sam description applies to either.)

I

It is important to recognize that there are two separate an distinct features to this rating form.

First—Self-improvement through self-rating. It is designed pri marily for the student or teacher to rate himself. The first ste in self-improvement is to be made critical of the extent to whic one exhibits certain traits. Furthermore, clear recognition of one' deficiencies can and does lead to definite self-improvement. Form A, therefore, is of primary importance in improving the student, o the teacher in service. To bring about self-improvement, therefore both student and teacher should rate themselves, at least once eac year, each question on the form being answered.

Second—The rating scale. A method of giving a person *numerical rating* (116, or 132, or 74, etc.) of which the reliabilit is definitely known, and with which others' ratings can be directl compared; furthermore, a rating which cannot be confused wit the commonly used "per cent" marking system of the publi schools. This scheme provides a method of direct comparison b which a teacher (or student) is rated on five different groups o qualities, by being compared directly with five others, whose name have been assigned definite positions on the scale. These five per sons are selected so as to represent respectively (1) the best teache (or student) the rater has ever known; (5) the poorest; (3) th representative "average" teacher (or student); (2) the perso midway between the best and the average; (4) the one midway between average and the poorest. A definite number of points i assigned to each of these five positions on the scale; for example 38, 30, 22, 14, 6, respectively. Thus a person is given a singl numerical rating by totaling the points he is given on each of th

[1] This outline of the purposes and use of the rating forms and the approxi mate reproduction of "A Rating Scale for Judging Teachers in Service" o pages 412–413 are reprinted with the permission of Dr. Harold O. Rugg.

ive groups of qualities. In the case of teachers, this is of especial mportance in rating for promotion.

The scale is so constructed that a teacher who represents "aver-ge" in each will receive a score of 110; a teacher who represents best" in each will receive a score of 190; and the one who repre-ents "poorest" will receive a score of 30.

II. HOW TO CONSTRUCT A RATING SCALE

Form B

A. Two important facts:

1. It is very difficult to make a rating scale properly. A scale cannot be constructed in less than two or three hours.

2. Once made, the scale needs but little modification from year to year.

B. Necessary steps in the construction of a scale.

There are three major steps in constructing a rating scale.

First step: Write down a list of 25–30 teachers (or students) ranging from the very best to the very poorest in your acquaintance, for each of whom you can answer the questions of Form A of the Rating Card.

Important: The list must *not* contain less than 25 names. It must contain some *very* poor teachers, some *very* good teachers, and a considerable number of "average" teachers.

Second step: Arrange this list in rank order of merit from the "best" to the "poorest," *separately for each of the five groups of qualities.*

Important: In ranking persons for one group of qualities (say "skill in teaching"), the other groups of qualities must be absolutely ignored. The arrangement of the list in rank order is *the most difficult and important single step in the construction of a rating scale.* Experimentation has shown that to do it successfully, the most effective method is as follows:

1. Locate each person in the list in one of three groups for each question in each group of qualities on Form A. A study of this checking should enable you to rearrange the teachers, or students, on your original list in from three to five groups.

2. Next, therefore, group the teachers on the original list in at least three and, if possible, five groups—say put in one group the few who are markedly "best"; in another, the few who are clearly "poorest," and the remainder in a third group who exhibit various degrees of "mediocrity." If the large mediocre group can next be separated into two or three groups, it will facilitate the next step, viz.:

3. Rearrange the persons in each group so that they stand in exact rank order. This will be most difficult to do in connection with the "average" groups.

4. Complete the final "rank order" arrangement of the entire list by comparing the teachers near the limits of the adjacent groups, *e.g.*, further direct man-to-man comparison may result in interchanging individuals from, say, a "better than average" to an "average" group.

When the original list is finally arranged in the rank order, you are ready for the

Third and last step in the construction of a rating scale: Select five persons to occupy the five positions on the scale in each group of qualities. Do this as follows: (1) make a final decision as to which of the two or three persons in the "rank order" list is really the "best" one you ever knew *and can now use* for purposes of scale-comparison; (2) select in same way the "poorest" for the scale; (3) from the two or three who stand nearest the middle of the list, decide upon the best one to represent the "average" position on the scale; (4 and 5) similarly with the ones to occupy the position halfway between the average and best, and halfway between average and poorest. These are called respectively "better than average" and "poorer than average."

Important: Experimentation and experience in the army have shown that the scale can be made properly only by carrying through these major steps *separately for each group of qualities on the scale.*

III. HOW TO RATE TEACHERS ON THE SCALE

1. The rating is to be made for one group of qualities at a time, giving each person a stated number of points for that quality. It is done by comparing the person's qualities directly with those of the others whose names appear on the scale. Visualize each one as vividly as possible, thus locating a person at a particular point on

the scale. Be sure to give him the exact number of points that you think represents his position on the scale. The numerical values 38, 30, 22, 14, and 6 have been selected to give you considerable opportunity to assign values *between* these set points; for example, in the long run nearly as many should receive 23 or 21, as 22, which is the "average" point of the scale.

Important: In case you are unable to decide clearly between the person you are rating and those whose names are on the scale, examine the results of checking the definitional questions in that group of qualities in Form A. This will enable you to compare them more concretely.

2. The *total rating* of a person is obtained by adding the number of points given him on each of the five groups of qualities, writing this in the compartment of the card left for the total rating at the lower right-hand corner.

Important: Scales for the rating of students should be made in group conference. All teachers who know the same set of students should come together and construct scales which will contain relatively the same names. *It is fundamentally important* that names assigned to particular scale-positions ("best," "average," "poorest," etc.) be the same on the scales of different teachers. Otherwise the numerical ratings made against these scale-positions by various teachers may not closely agree. If teachers, in conference, can agree on the names of students to go on the scales, numerical ratings made against these will have very great reliability.

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Name of Teacher _____

School _____ *Date of Rating* _____

Subjects _____

I. Skill in Teaching	Low	Aver.	High
To what extent			
Does he know the subject matter of his own and related fields			
1. In subjects like history, geography, etc., does he make effective use of material outside the textbook			•
2. Does he relate lessons to material in other fields and use illustrations outside his own subject (e.g., math. and science)			
Does he select subject matter effectively for class reading and discussion			
Are his aims of teaching clearly defined			
Does he give evidence of having			
1. Formulated clearly his aims of teaching, as shown by his written statement of aims and outcomes			
2. Planned his lessons specifically to carry these out			
3. Distinguished clearly between (*a*) "formal skill" (either in manual or academic subjects), (*b*) "information," and (*c*) "problem-solving" as proper outcomes from his class work			
4. Given pupils clear ideas of the purposes of lessons			
Is he skillful in conducting the class discussion			
a. Resourcefulness in organizing a discussion and in "thinking on his feet"			
1. Is he fertile and quick in taking advantage of pupils' questions			
2. Are his questions systematically planned, yet spontaneously given			
3. Does he express himself clearly			
b. Skill in conducting "drill" exercises			
1. Does he make use of economical, "timed," drill-devices (such as Courtis's Practice Exercises etc.)			
2. Does he properly subordinate drill to clear exposition; that is, keep a proper balance between drill and "development"			
c. Ability to "develop" new phases of the work			
1. Are lessons well related to previous ones			
2. Is material "organized"			
3. Do lessons show the use of material in the solution of present or future problems			
a. In his subject			
b. Outside his subject			
d. Ability to secure class participation in the recitation			
1. Do all pupils in the class take part in the discussion . . .			
2. Do the pupils question each other and conduct the class independently of his formal direction			
e. Skill in making the assignment			
1. Was it an attempt to teach pupils how to study the lesson .			
2. Was it more than mere formal announcement of the number of pages in the text etc.			
3. Is its scope and purpose clearly recognized by pupils . . .			
Has he insight into "how children learn"			
1. Does he keep the discussion within the pupils' comprehension			
2. Does he endeavor to discover pupils' difficulties by keeping records of errors and studying these			
3. Does he adapt discussion to individual differences in pupils .			
Summary Rating on Skill in Teaching			

II. Skill in the Mechanics of Managing a Class	Low	Aver.
To what extent		
1. Does the class work proceed smoothly (without artificial interruptions and transitions from one kind of discussion to another)		
2. Do the pupils attend naturally and spontaneously to the work of the lesson		
3. Does order, or discipline, inhere in the work (not maintained by compulsion nor suppression) .		
4. Is routine, as passing material, moving to the blackboard, etc., economically and systematically organized		
5. Is material and equipment in the room effectively arranged		
6. Does he pay attention to the details of heat, light, and ventilation		
Summary Rating		

FORM B—RATING BY

The Rating Scale: Containing the names of typical teach

(*Primarily for principals and super*

I. Skill in Teaching		
Best Teacher	38	.....
Better than Average . .	30	.....
Average	22	.....
Poorer than Average .	14	.....
Poorest Teacher . . .	6	.....
Summary Numerical Rating.....		

II. Skill in the Mechanics of Managing a Class		
Best Teacher	38	.....
Better than Average .	30	.....
Average	22	.....
Poorer than Average .	14	.....
Poorest Teacher . . .	6	.....
Summary Numerical Rating.....		

A RATING SCALE FOR JUDGING TEACHERS IN SERVICE

FORM A — SELF-IMPROVEMENT THROUGH SELF-RATING

For analyzing and rating the teacher's qualities — by the teacher himself; and by the administrator

(*Rate by checking in one of three groups for each question*)

III. Teamwork Qualities	Low	Aver.	High
what extent			
Does he coöperate with other teachers in school activities (committee work, Parent-Teacher Association, etc.) . . .			
Does he contribute to faculty meetings . . .			
Is he loyal to the administration and to other teachers			
Does he suggest plans for group improvement of the school			
Does he shoulder responsibility for his own acts			
Do pupils go to him voluntarily for advice and conference . . .			
Does he go out of his way to advise and help students			
Does he acquaint himself with pupils' home conditions where it is wise			
Does he participate in community activities outside the school . .			
Are his records and reports in on time and in complete form			
mmary Rating			

IV. Qualities of Growth and Keeping Up-to-Date	Low	Aver.	High
To what extent			
1. Does he read professional literature — books, journals, etc.			
2. Does he participate in and contribute to the discussion of educational meetings (teachers' association etc.)			
3. Does he take extension courses, attend summer sessions, etc.			
4. Does he experiment with new methods in teaching which others have suggested			
5. Does he invent and experiment with new methods of teaching			
6. Does he heartily coöperate in investigational work in which various schools participate			
7. Does he participate on committees of associations in his own subject			
8. Does he contribute to educational literature . . .			
Summary Rating			

V. Personal and Social Qualities	Low	Aver.	High
To what extent			
1. Does he attract people to him (i.e., is he interested primarily in what others are doing)			
2. Does he meet people easily			
3. Does he recognize the importance of trimness in dress and general personal appearance . . .			
4. Is he "fine-grained" (i. e., is he sensitive to social proprieties)			
5. Does his impression of his own ability operate to handicap his effectiveness			
6. Is he effectively aggressive in conversation and conference			
7. Is he tactful in dealing with pupils, colleagues, and patrons			
8. Does he "eventuate," i. e., does he carry through projects which he starts			
Summary Rating			

SELF-IMPROVEMENT THROUGH SELF-RATING

To the Teacher. Rate yourself on each quality on this form. It will be a first step in self-improvement. It is important that you stand high in these qualities.

To the Principal or Superintendent. Let the teacher rate himself on each question at least once each term. Self-analysis is the first step in self-improvement. To analyze human qualities well, one needs a definite and detailed guide. For effective teacher rating, both teacher and administrator should rate and confer on specific qualities which make for good teaching. A valuable file of the administrator's analyses of his teachers can be kept in the office.

RECT COMPARISON

who can be compared with the teacher to be rated

endents in the rating of teachers)

III. Teamwork Qualities		
est Teacher . . .	38	.....
etter than Average	30	.....
verage	22	.....
oorer than Average	14	.....
oorest Teacher . .	6	.....
ummary Numerical Rating.....		

IV. Qualities of Growth and Keeping Up-to-Date		
Best Teacher . . .	38	.....
Better than Average	30	.....
Average	22	.....
Poorer than Average	14	.....
Poorest Teacher . .	6	.....
Summary Numerical Rating.....		

V. Personal and Social Qualities		
Best Teacher . . .	38	.....
Better than Average	30	.....
Average	22	.....
Poorer than Average	14	.....
Poorest Teacher . .	6	.....
Summary Numerical Rating.....		

Total Numerical Rating.....

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