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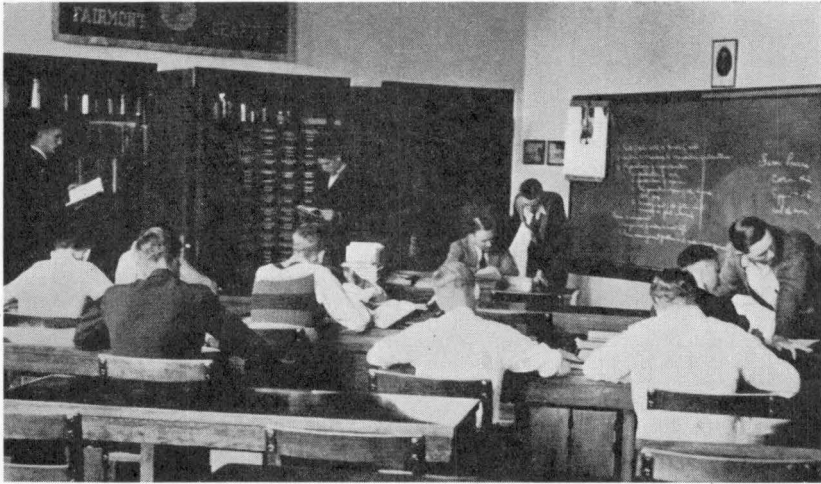
No. 4

The Approved Practice Method of Teaching Agriculture Through an Integrated Course of Study

Thomas Raine, Instructor, Fairmont, Minn.

Minnesota has used the so called cross-section method of distributing subject matter material in the course of study for a number of years. Recently various attempts have been made to devise an integrated course of study in which the boy becomes the focal point of interest. The

descriptive of the method used in attempting to integrate the boy as he studies agriculture in the Fairmont High School. The purpose of writing this paper is not to set up a standard or model, but to show what has been done as a beginning. It is sincerely hoped that others will incor-



A representative agriculture class, Fairmont, Minnesota, showing the students at work on individual problems.

consideration of the attitudes, habits, knowledges, practices, and social adjustments of the boy is the means by which this integration is achieved. We now try to integrate the boy with his total environment. The medium through which the integration takes place is the course of study. During the process of this integration farm practice work plays a dominant part. Through it we study a farm, not a text. We integrate the subject matter taught, because farmers integrate their farming activities, and to quote Dr. Field, "We should teach boys to farm the way that farmers farm." This necessitates and encourages much individual study. The explanations which are to follow are

porate their ideas cooperatively which will aid in the further development of the integration of the study of Agriculture in Minnesota.

The entire Agriculture course of study is organized into Teaching Units and Learning Units. In the important enterprises the headings are distributed throughout the entire four years of instruction. Each enterprise is first analyzed into Teaching Units. The teaching unit is defined as, "A major division of the enterprise on the basis of the relationship and the similarity of problems involved." In a like manner the learning unit is defined as, "A natural sub-division of the teaching unit on the basis of related ap-

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THE STAFF

A. V. STORM

V. E. NYLIN

A. M. FIELD

LEIGH HARDEN

A. M. FIELD, *Editor*

proved practices made up of consecutive jobs." The student then organizes the material included in the learning unit into approved practices and the approved practices into related information, jobs and devices. These are defined and explained under separate headings. Students in the Agriculture II, Agriculture III, and Agriculture IV classes studied largely individually. In this way one group could study swine, another dairy, another poultry, or any other unit in whatever sequence desired. This made possible a greater use of the available textbooks and other reference materials. It also serves to meet the individual needs of the boys in a more satisfactory manner.

The picture shows a typical class organization while doing individual study. The two boys at the extreme right are discussing a common problem in swine. The boy at the bookshelf and the one at the bulletin file are looking up additional information to aid them in solving a home problem they have encountered. The boy at the instructor's desk is talking over a number of solutions he has found, one of which will be selected mutually as being more applicable to his home farm than the rest.

The remainder of the boys are formulating approved practices individually.

When a student completes a learning unit or a teaching unit, he gives the approved practices he has formulated to his teacher, who checks and grades each one, allowing 15 points for average quality and completeness; 10 for less than average; and 20 points for a complete approved practice set up with all of the needed information well organized into the unit parts. Here again the teacher must consider the home conditions and the farming practices of that family, and decide whether the student has included all of the essential approved practices necessary to improve these farming methods, as de-

termined by a survey of the approved practices on that farm. It is obvious that some students will be thinking and working on a more advanced level than others because their parents are farming in a more improved way. Therefore, some of the more elementary approved practices need not be considered by these boys in class as they are already a part of their daily life, and are applied as a matter of course in the ordinary routine of the farm. All of us at one time or another have experienced a student saying, "That's nothing new; we do that all the time." You know, though, that certain members of the class needed drill on that very procedure. It is here that individualized study has its greatest advantage.

Students are expected to study intensively two of the three major livestock enterprises in the community: dairy, beef, and swine, the major field crop enterprises, and as many elective enterprises as time will permit. These electives are selected by the pupil with the help of the instructor. Generally speaking, every other Friday is used for special farm practice planning work, and the intervening Fridays for reports on current problems of agriculture. These reports are discussed by the class and their adoption either recommended for the home farm or rejected as being impractical. This gives us a chance to correlate many individual problems by group action. Boys are taught how to keep farm records in the Agriculture II course. During the winter quarters the Monday class period is devoted to entering a sample set of business notes in the Minnesota Farm Record book. When the Agriculture II group has progressed to Agriculture III, they are expected to keep a complete set of farm records of their home farm business, again using the Minnesota Farm Record Book. The recording of these items of business is done during the Agriculture III class period each Monday. This gives the instructor an opportunity to check the records closely and helps the students to keep them up to date. The remaining three days of the week are devoted to formulating approved practices individually.

A scorecard or grading implement was devised to encourage a greater adoption of the approved practices, which after all is our end result. In this it was quite successful at Fairmont. It also has enabled the boys to see the practical application of their Agriculture course, and to acquaint the parents with its practicability. The evaluation guide will be discussed in the next issue of the Visitor.

The Approved Practice

The Approved Practice may be defined as, "A procedure or activity considered essential to the successful operation of the enterprise and based upon experimental evidence or successful use by farmers." This definition allows much latitude in statement. In actual use in the classroom, there will be almost as many different ways of stating approved practices as there are students. As this statement must be formulated from the reading and thinking of the individual student, it is difficult, and perhaps not desirable, to achieve a common standard.

When formulating the approved practice the statement should be made broad enough to include all necessary related information, yet not so broad that other types of information which will cloud or obscure the meaning will be included. There should be no discussion, simply a statement of what should be done with amounts or important figures included. To illustrate: "Wash the farrowing pen with hot water and lye," might be accepted as an important approved practice, but if this was given to a person who knew nothing whatever about the swine enterprise he would be at a loss in trying to carry it out. What are the points that he will need most to know?

1. What concentration of lye should be used?
2. How hot should the water be?
3. How might it be applied?

The reasons for using the approved practice will be stated in the related information. They have no place in the approved practice. Therefore, rewording might be done something like this: "Scrub the farrowing pen thoroughly with a boiling lye solution, 1 lb. of lye to 35 gallons of water." Now the approved practice tells us the essential things necessary for its completion. We see that the water must be boiling, that the pen must be scrubbed rather than just washed and that the concentration of lye should be 1 lb. to 35 gallons of water. If the novice did not read the related information and the jobs which are to follow he would still have a fair idea of what is expected.

The wording of the approved practice is important. Avoid such beginnings as "We should use," "It is good to use," or "The pens should be washed with a lye and water solution." Word the approved practice to make a simple definite recommendation, stating what is to be done.

Related Information

The type of material included under related information may be defined as "Statements which explain or help to make clear the meaning of the approved practice." It may also include other ways of achieving the same results. Related Information is the "Why" of the completed approved practice.

The wording of the facts included in the related information is very important. Each separate thought should be itemized and numbered. Avoid all unnecessary discussion. Use as few words as will give the full meaning of the thought expressed. The statement should not be in the form of a command, but merely a quotation of fact. They should be arranged in the logical sequence necessary to round out the thought propounded in the approved practice. Students make a common mistake of going into a lengthy discussion in explaining the approved practice. This is an unnecessary waste of time as the more writing that must be done, the more the student will be retarded in his achievement. Here again there are two extremes. One type of student will not include enough to clarify the thought of his statement, while the other will fill pages in over-amplification or overstatement of the related information. Somewhere between the two is the desired goal. For example, in the approved practice for using lye, such points as these should be included in the related information and might be stated something like this:

1. All dirt must be removed to allow the water to penetrate and kill the eggs while the water is still hot.
2. The lye helps to soften the dirt and grease, but does not kill the eggs.
3. The water must be applied while it is very near to boiling so it will kill the worm eggs.
4. All parts must be soaked thoroughly with boiling lye water, for if a few eggs are left, the roundworm cycle will start all over again.
5. Scrubbing is the only way one can be sure that the water reaches all crevices and cracks.

It will be noticed that some of these statements may be interpreted as jobs. There seems to be a point in organizing material in this way where it is difficult to differentiate between which material should go into jobs and which into related information. Students have difficulty in trying to determine this point. Perhaps some types of information can be classed under either heading. If it is put under the head of related information it should not be stated as a job, but as a

statement of fact or recommendation. The point, "All dirt must be removed to allow the hot water to penetrate and kill the eggs while the water is still hot" is restated again as a job in, "Clean all litter from the pen by scraping with a hoe if necessary." Perhaps there is no harm in a student enumerating material of this type under both heads. The two things to avoid are mixing statements which are plainly related information with statements which are clearly jobs, and the long essay type of discussion which will not serve the purpose of drill as efficiently as clear, concise statements.

The Jobs

The job may be defined as, "One of a series of steps necessary to the satisfactory completion of the approved practice." A job should be a simple unit command covering one step only. Most approved practices have a number of jobs, ranging usually from six to ten in number. The arrangement and statement of jobs is a good criterion of the quality and accuracy of the approved practice. It is here that the student must analyze the approved practice statement and the related information statements carefully in order to break them down into unit jobs. It is of the utmost importance that this be done, and the arrangement made in proper sequence so that anyone, by starting with job one and doing them in numerical order, will have completed the approved practice when he finishes the last job.

Jobs may be stated something like this:

1. Scrape all litter from the pen, with a hoe if necessary.
2. Mix in the proper amount of lye (1 lb. to 35 gallons of water).
3. Heat the water to boiling.
4. Scrub all surfaces with a stiff bristle brush.
5. Use plenty of boiling lye water.
6. Handle the boiling lye water carefully and avoid a severe burn.
7. Let the pen dry thoroughly before adding bedding.

Students are most likely to slight the statement of jobs because it demands clear, concise thinking. It is this thinking and logical arrangement of steps which makes unnecessary much group discussion. The main use of class discussion is to make clear obscure points and to fix important facts in the student's mind. When properly performed, the arrangement of jobs in sequence will help to clarify obscure points and will serve as an effective type of classroom drill.

This does not mean that discussion is not needed. Many problems need a group

approach and discussion. It is in this arrangement of jobs that the student will come to his instructor for individual help in solving problems which are peculiar to him alone. He is asking the question at a time when his mind is seeking the answer. He is vitally interested in knowing the result because he is seeking solutions to past problem experiences. By settling the question asked at that time, the student's mind absorbs the answer completely because it is searching for that one thing only. If the questions asked by a group of students in a classroom discussion are analyzed carefully, it will be found that most of the questions are of immediate interest only to the person asking them. Other members of the class will be passively interested and, therefore, will not retain many of the facts involved. It is true that the teacher may have to answer the same question a number of times when teaching under a limited discussion method, but in most cases the answer will have an individual application to the farm of the boy asking the question. This proves to be very interesting to the pupil and to the teacher. Both are brought more closely together by this mutual understanding of the problems involved and their peculiar application to that boy's home. On the other hand, different students, during a class discussion, will ask the same question a number of times unless the teacher is very skillful in guiding their thought by drawing such a vivid work picture that all students will think in the same way. This is difficult to do when teaching Agriculture wherein we wish to apply home solutions of problems.

Devices

A device may be defined as, "Any unusual appliance or contrivance which will aid in accomplishing the approved practice." There are many approved practices which do not need devices when gauged by this definition. There is little need to take the time to write in the names of the common tools needed to perform a certain practice. In the approved practice, "Provide stanchions when feeding skim-milk to calves," about the only tools needed are a hammer and a saw if the stanchions are to be made of wood. But in the approved practice, "Cull the pullet flock carefully before placing in winter quarters," a catching hook and a catching crate will aid the culling process greatly. Each of these is an unusual piece of equipment because many farmers do not possess them. They might well be designated as devices, and should be listed as such.