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APPLICATION OF THE GROUP CONFERENCE METHOD OF TEACHING TO BEGINNING CLASSES IN PLANT PATHOLOGY

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The teacher's ability to stimulate and to work with each student largely determines the value derived from a course by the student. The contact of teacher with the individual student is more difficult to effect in large classes (50 students or more) than in small classes. In the large classes a restraint and formality may prevail that are lacking in groups of 20 students or fewer.

The group conference method of teaching[2] is one way of building into large classes the atmosphere and advantages inherent in small ones. To facilitate this plan it has been found necessary to rearrange the seating of the students in the work room. The long tapered Bessey[3] laboratory tables extending back from a north window were a distinct aid to microscopic work and laboratory teaching in the days when we were wholly dependent on daylight, but that day has passed. There is now available artificial light that serves the purpose of the student as well as daylight. Good daylight cannot be excelled, but poor daylight, and many times during the year daylight is poor, can be excelled by many forms of artificial light. Consequently, it is no longer necessary or desirable to have the students seated in long rows on each side of tapered laboratory tables. The effectiveness of the teaching is greatly facilitated by arranging the students around a well-lighted work table accommodating four to eight students. The student groups then may be treated as entities although a part of a large class. The seating of the student in a room is often a determining factor in any student learning program.

The traditional manner of seating the students in relation to the instructor consisted of seating them in formal theater-like rows. By a slight rearrangement of the seats in the classroom students can be seated in isolated small groups as well as they can be packed in a compact checker board design. Round or rectangular work tables that will accommodate the group of four to eight students, arranged around the instructor's demonstration table in the middle of the room, places the teacher within easy access of every student. The place of the teacher in the room is important. It is questionable whether the teacher can be most effective when perched on a platform behind a pulpit. Such a situation promotes formality and creates a chasm between the student and the teacher. The teacher can be most effective when moving about from group to group, thereby avoiding form-

[1]The authors wish to acknowledge the sympathetic encouragement and constructive criticism received from the teaching staff of the Botany Department.

[2]Dietz, S. M. The development of the group conference system of teaching. Symposia commemorating six decades of the modern era in botanical science 1: 45-65, 1935. Iowa State College Journal of Science. Vol. 9, No. 243, 1935.

[3]Bessey, Charles E. The management of a botanical laboratory. Jour. of applied microscopy. 2: 232. 1899.

ality and promoting individual work, thought and discussions. Each group of students may be treated as a separate conference considering certain problems.

A conference is a meeting to adjust differences in the thoughts and thinking of the individuals in a group. Diplomats, physicians, clergymen, and scholars test their individual thinking in consultation with one another. Legislative bodies confer, deliberate and modify their proposed ideas through discussion in conference before embodying them into laws. The discussion is the means utilized in promoting and directing the thinking of the members of the conference. It is a method of exchanging views and information on any problem and bringing to light a better understanding before arriving at a conclusion.

The first purpose of a conference is to clarify the problem, then to promote thinking on the problem and its solution, to assemble and evaluate possible solutions, and, finally to arrive at a correct solution.

We learn almost in proportion to the amount of thinking we do, and thinking soundly is an acquired habit which can be helped greatly by conference discussions. Group conferences are distinguished from the "pouring out" process used in lectures and other advice-giving methods by the teacher acting as leader of the discussion carried on by the students. Too often these other methods are purposely designed to give only one side of an issue, and it is a rare individual who can or will go further and seek all alternative solutions of an issue. The real functions of the teacher as leader are those of encouraging the free and equal expression of views by all students, promoting the synthesis of the individual contributions into an intelligible, lucid unity, and, in a hundred unobtrusive ways, directing the progress of the discussion to its goal. The leader will most effectively accomplish these functions when he keeps the spotlight of attention on the dynamics and applications of the principle under discussion. The group conference facilitates the "airing" of all angles of the problem and promotes individual thinking and discussion within a close, well-knit group. It is also a way of testing our ideas by encouraging others to examine our concepts and check our conclusions. The conference plan holds attention closely to the problem before the group and promotes adequate information and clear thinking. Conferences and discussion are not new in teaching. They have been used for a long time. Lord Macaulay once said long ago, "Men are never so likely to settle a question rightly as when they discuss it freely."

The application of the group conference method of instruction may be illustrated by a description of its use in a general course in plant pathology. Because of the restrictions encountered in a schedule developed under a lecture-laboratory system, it was necessary to fit the teaching method to the time scheduled for the course. The objectives of this general course are to help the student to acquire (1) an appreciation of the influence of plant pathology on human affairs; (2) an understanding of health and disease in plants; (3) an under-

standing of the phenomena of parasitism; and (4) a certain amount of information about the characteristics of diseases, their symptoms, cause and control. In the teaching of this course it has been necessary to meet three conditions: Many of the students have no intention of becoming professional plant pathologists and take the course merely so that they may become better farmers, teachers or agriculturists; the time allotted to the course is four quarter-credit hours; and, a large amount of material must be presented in a concise manner in a form intelligible to beginning students.

The course consists of four group conferences per week, two of one hour duration and two of three hours. There are no lectures, recitations or laboratory periods. The group conferences are conducted in the presence of specially selected and prepared specimens. The study material consists of living diseased and healthy plants, preserved diseased material, cultures of the pathogens, prepared slides, and diagrams of host-parasite relationships. The procedure followed by the students of any group is of their own choosing. The course of the method of study chosen is facilitated by an introductory discussion led by the instructor, by prepared outline work sheets suggesting points to be observed, measurements and comparisons to be made, and by certain directional questions, comments and discussions. Frequent conferences with the different groups afford an opportunity to direct the observations and guide the line of thought so that the principles of the science are illustrated or supported by the facts disclosed in the study material. Students come in contact with the practices of the science by making spray mixtures, treating seeds, isolating plant pathogens, inoculating plants, etc. Finally the more important facts and principles are elaborated further in discussions with the entire class.

Little attempt is made to direct the work of all groups along a single path. The individuals are encouraged to consult all sources of information, conduct laboratory or greenhouse tests, etc. that may contribute to the understanding of the science gained by themselves or the group or class as a whole. Whenever possible discussions of the applications of the subject in agriculture, explanation or criticism of current practices and the integration of plant pathological and agricultural practices are stimulated and encouraged. The result of the group conference is that the instructor in effect conducts simultaneously several sections of a class seeking an understanding of a science, each frequently by a different approach. The results of the various approaches are then discussed and unified into a whole for the entire class.

The progress of the students is measured in three ways. (1) At the beginning of each long conference, the first 30 minutes often are devoted to answering questions on the outstanding facts or principles that were evident in the two previous conferences, one long and one short. (2) Two comprehensive two-hour examinations are given. In these examinations the questions used are of the essay, problem and

objective types covering the content of the course. (3) A term paper is required, which measures rather well the student's achievement. In writing this paper the student is encouraged to consult original scientific and popular literature. These reports are reviewed orally with the student. Thoroughness and excellence of preparation and interpretation are required for acceptance.

The course is not designed to provide a fund of facts concerning plant diseases but rather to develop the four principle objectives. This end appears to be accomplished better by using the group conference method in all four contacts than by any other method of teaching tried during the past two decades.

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