

How To Individualize Instruction in Large Classes

VIVLA V. JOHNSON, Junior High School, Norman, Oklahoma

Each teacher of General Science who is charged with teaching large classes has a great challenge to meet, if he or she endeavors to be an effective force for uplifting in the lives of each boy and girl.

I teach five classes of ninth grade General Science in the Norman Junior High School. I sponsor a Norman Junior High Science Club and a Junior 4-H Club.

My ninth grade General Science students have a wide range I. Q. within each class. My ratio of boys and girls, this year, is 8 to 3, that is, I have about 8 boys for every 3 girls. My class size varies from year to year.

More effective learning is possible in large classes, only when we lead each student to realize that it is both a privilege and an obligation to participate in class discussions.

I have certain days that each student is called upon and we grade on the discussion. Such recitation may be of any one of the following types:

- (1) something they have read outside the text, which applies to the lesson.
- (2) something learned from the lesson.
- (3) some experience they have had which applies to the lesson.
- (4) some device they have made to demonstrate or explain some part of the lesson.

This procedure rules out the "would be talker" and automatically gives each child an opportunity to express his or her ideas. It also gives the teacher a better insight of the student's interests and abilities. The retiring student learns that he or she has an obligation to take part in class discussions.

I have found it more effective to organize Science Education in terms of units. Each unit is broken down into problems, since the nature of a General Science course is determined by the present and future problems of the students in the community.

Each problem is organized and presented to develop skills and reflective thinking. I use every effort to stimulate, guide, and develop my boys and girls scientific interests, attitudes, and appreciations.

I use a basic text, but I have a collection of different texts in my classroom, several science magazines, and world books. My students are not limited to one approach.

In large classes the superior students can carry the load of the most technical discussion of problems in the unit, after the lesson has been discussed a superior, or a well trained student, may give a special demonstration, or discuss and explain a project during the last half of the class period.

This procedure gives a distinct change of activity for the entire class and breaks the monotony by giving variety to classroom procedure.

Workbooks

I use a workbook to develop better aptitudes and form certain habits of thinking. It teaches students to work in groups during a supervised

study period. In large classes, you continually have students who are re-tarded for various reasons. If I am needed during the classroom period, I often allow some student in the room to explain or assist, a student who needs help or information because of absences or other reasons. This student who aids does not have to be the most brilliant student, if he or she were in the classroom when the work was studied or demonstrated. I have a storeroom adjoining my classroom, also the health nurse's room near my room. I use both of these at times. I allow only two at a time out of the room. But I find much can be accomplished in make-up work, provided the students are carefully supervised and are guided to pass in and out of the science classroom in an orderly manner.

Outside of Class Activity

I give much individualized instruction in large classes, by having students come to my classroom at 8:30 to 9:00 A. M., and 3:20 to 4:00 P. M.

During each class period I carefully note which students need individual help. I generally arrange for the conferences privately after the class. I get to know the student better, if I meet the students alone. During these periods, I give make-up tests, guide students on projects, help students to set up experiments, assist with demonstrations and just get acquainted with my boys and girls.

Projects.

I give much individualized instruction in large classes through the preparation of projects both in and outside the classroom. I use projects as a means of teaching different scientific principles and to develop technical skills of boys and girls. I believe a project should be required of each student, but in some cases students are allowed to write special reports on leading scientists and inventors.

Projects may be individual or group. As each student begins his or her project, the student is asked what he or she is going to do and why.

I have special conferences with each student or groups of students. If it be a group project, I guide the procedure in such a way so as to challenge the most brilliant student by having him or her prepare the most technical phase of the project.

In every project, there are three parts to report: a paper, drawing, and a model. In a student's report I have them tell how they became interested in the project, what problems were difficult to solve, and what were the conclusions or results of the investigation or construction. If it is a group project, I find out what part each student has prepared. In this way, you give individual instruction and learn more about a student's aptitude than you can in a formal class discussion in large class groups.

I find my teaching of Science Education is more effective, if I use a variety of materials and procedures.

Diagrams.

In large classes, you generally have students eager to reproduce small charts and figures, which apply to the problems being studied. For example, a colored chart on the blackboard may clear up many difficulties in the study of "Heredity", in regard to dominant and recessive characteristics through the first, second, and third generations.

Experiments.

Experiments are good learning devices if used effectively. The true purpose of an experiment is to furnish evidence of the truth and falsity of some problems being studied.

I encourage all my students to try out various experiments, both at home and at school. I guide, direct, and assist boys and girls to plan, set up, and try out experiments. Some are done by poor students, others by the superior students.

I guide each student in the planning and preparations, so that, when he or she comes before the class, all problems and questions have been cleared up. I find both the poor and good students will spend plenty of extra time in preparation for such an event.

Organize and Operate a Science Club.

A science club made up of students from your science classroom gives a teacher many golden opportunities to give individual instruction.

I operate this club to help its members to learn more science and become useful citizens. Any boy or girl interested in science may become a member. We try to make it a club where both retarded and superior students can discover and develop, as far as possible, their skills and talents in science.

In this club students have an opportunity to learn from each other by exchange of ideas. Every member is given a chance to choose any problem or project that he or she is interested in. I call on the staff members of the University of Oklahoma, high school science teachers, business men, or any person qualified and willing to guide or assist students with their problems or projects.

Science Fair.

For the past 5 years the Norman Jr. High Science Club has sponsored a Cleveland County Science Fair. A science club gives the teacher an opportunity to use an indirect approach to the teaching of subject matter. One has a great opportunity to recognize the individual differences in the interests and abilities of ninth grade boys and girls. Every time you have a conference with a student or assist with a project you are giving individualized instruction which comes back to your classroom.

In addition to the above ways and means that I use to individualize instruction in large classes, I also carry out the following ideas:

(1) I have students work in groups and catalogue my project material. Some are taught to analyze books, magazines, etc. The names of the projects and pages are written or typed and stapelled on the cover of each magazine, for more effective use in class and club activities.

(2) I have a collection of charts and diagrams that explain scientific principles. These are displayed in certain places in the classroom at the time the information applies to the unit being studied. Students are assigned to these charts in groups of two students for each chart, I teach them how to explain these charts, one is the leader, the other is the team-mate. I feel that this procedure makes for a greater class appeal on the part of the students. This individualized instruction is given to the leaders and team-mates at 8:30 to 9:00 A. M., and from 3:20 to 4:00 P. M. I find students enjoy this technique and it gives leadership to a number of boys and girls.

(3) I encourage students to bring to class any type of Science Material to be put on our bulletin board. Some of the students are taught how to mount this material on the bulletin board. Individualized instruction takes place with certain groups as they classify and mount these clippings.

(4) I individualize instruction by checking written or homework during the class period. I often have different students do work over that is unsatisfactory. As I check their papers, I call attention to the student's errors and they correct them under my supervision. Too many teachers

spend hours correcting student's papers, and often such students never take time to read and interpret the teacher's corrections.

A plain bar of iron is worth five dollars. This same bar of iron when made into horseshoes is worth \$10.50. If made into needles, it is worth \$3,285, and if turned into balance springs for watches it becomes worth \$250,000. The same is true of another kind of material—our boys and girls. Their value is determined by what we make of them.
