

# Participation Grading: A Way to Involve All Students

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**I**F YOU WOULD LIKE your students to be continually involved in class activities, try participation grading. If you have noticed that many of your students are floundering because of poor study habits, try participation grading. If you would like your students to share more responsibility for their own learning, try participation grading. Participation grading is both a motivational and evaluation technique that is applicable to any kind of classroom setting.

Because our required ninth-grade science course is composed of a captive audience, we have grouped the students on three levels and use participation grading to help them become more involved in their own learning. We have ten sections of an average 25 students, taught in a self-contained discussion and laboratory classroom. About two-thirds of the course is discussion and one-third is laboratory activity. We are somewhat traditional in our approach, and this is the reason for the development of participation grading. Although we are sold on the idea of an inquiry approach, we feel that the immature student in a general biology course needs careful direction to accomplish the maximum in the allotted time.

## *Self-Evaluation*

In order to guide the students toward achieving the goals of involvement, evaluation, and responsibility rather than just memorizing content for a test, we ask them to rate themselves daily as good, fair, or poor, for 20 items on a "participation sheet" (fig. 1).



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All these items do not receive the same emphasis in determining the student's participation grade. Roughly, they fall into three categories: those things that are essential; those things that indicate increased involvement; and those that indicate superior performance. A number of the items indicate to the students that even menial requirements are necessary adjuncts to learning. The second category includes asking questions, evaluating others' answers, and so on. We believe students' answers are often more understandable to other students than the teacher's. The third category includes such items as contributing biological material, developing a hypothesis, and so on. Students may contribute articles, reports, or just biological facts and receive minimal credit for doing so. In the process of thinking about a problem, we encourage the student to develop a hypothesis as a solution to that problem. This eliminates simple questions that have not been thought out. In developing or discussing hypotheses, students often come to realizations that are of particular interest to them, and we would like to know about it. We encourage students to summarize main ideas or concepts in each section of their textbook. This helps them concentrate on what they are reading as well as helping them organize themselves.

At the end of the week each student fills out the back side of the participation sheet to indicate the grade he feels he should receive for the week. In listing the reasons they feel they should receive a grade, students have an opportunity to emphasize areas in which they have done well. The "things I should work on" section allows them to set short-term goals to improve behaviors they feel are inadequate.

## *Teacher Involvement in Participation Grading*

During the week we have given the students a daily participation grade of good, fair, or poor to indicate our evaluation of their participation. At the end of the week we also summarize by giving a grade for each student. We find it easy to summarize and evaluate five classes of students. We have agreed with the students' self-evaluation 30-100% of the time during the year, with an average agreement around 83%. We feel that this high percentage of agreement between teacher and student self-evaluation stems from our careful definition of how the participation sheet is to be used. The students understand how each item is evaluated.

WEEKLY PARTICIPATION SHEET

	Mon	Tue	Wed	Thur	Fri	T
Get busy when period starts						
Textbook covered						
Notebook and folder in order						
Pen and pencil						
Pay attention and think						
15 minutes study outside class						
Ask questions						
Answer questions						
Evaluate someone else's answer						
Read a portion of a chapter						
Reviewed biology notes						
Followed instructions						
Contributed biological material						
Sat and thought about a problem						
Developed a new hypothesis						
Learned something interesting						
Read a related book						
Used an outside reference						
Left the lab clean and orderly						
Wrote summary sentences						

(front of sheet)

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

GOOD FAIR POOR

I should receive a \_\_\_\_\_ for this week for the following reasons:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

I should work on the following:

- a) \_\_\_\_\_
- b) \_\_\_\_\_

(back of sheet)

Fig. 1. The students rate themselves daily as good, fair, or poor in order to evaluate themselves on class participation.

For the daily record, we place each class's seating chart under a sheet of plastic and write each student's grade in grease pencil which can be erased at the end of the week. Students are invited to comment on our weekly grades for them, and we try to encourage discussion and even disagreement.

At the end of the six-week grading period, the weekly participation grades are averaged. A "good" in participation raises the student's test score average one letter grade; a "fair" keeps the score the same; and a "poor" lowers the score one letter grade.

In evaluating the effects of participation grading, we found that 362 out of 1,170 students received a grade one letter higher than that of their test scores. Of the 362 grades raised, nearly 50% were C grades raised to the B level; approximately 25% were raised from a B to an A; approximately 17% from D to C; approximately 3% from D-minus to D; and about 5% from F to D-minus. In comparison to the 31% of grades that were raised, only 1% of the grades were lowered by lack of participation.

### Beneficial Results

We find participation grading has several beneficial results. Because the objectives a teacher puts forth for his students determine the results obtained, we are trying to set our objectives in the realm of behavior. Responsibility for one's own learning is one of the major objectives of our use of this method of evaluation. We have found over the last two and a half years that the students have, during the course of the year, taken on

a more intrinsic kind of motivation toward learning, and we have had to rely less on test scores as a motivational tool. We seldom if ever are asked if "this" or "that" will be on a test. In the student's mind, tests are no longer the focal point of a unit and are a much less traumatic experience even though the test scores still determine the student's basic grade.

Students are more interested and involved in daily activities now; they don't just sit through class from test to test. This involvement is demonstrated by students' being active in discussion—by asking questions, developing hypotheses for discussion, and answering or evaluating other students' comments. In the laboratory, students tend to take a responsible share of the planning, work, discussion, and evaluation of lab activities. There is much more total involvement than was evident before we started using participation grading.

As a result of the increased involvement on meaningful levels, fewer discipline problems arise. This is also due in part to the fact that both student and teacher are evaluating performance daily during the entire class period. Students are better able to realize the benefit of continual involvement and do not have the time or inclination to be disruptive.

Because the students are accountable each day for their participation in discussions, we have found that they comprehend textual material more fully than if they were cramming for a test at the end of each unit. This in effect reinforces good study habits. We emphasize that many of the items on the checklist refer to study habits. This gives the students and us a chance to evaluate and improve these habits.

For the teacher, one of the major benefits besides having a class of students that is involved in what is going is that the class becomes a group of individuals. Because each day you evaluate each student, you become more aware of that student as a unique individual; thus you are better able to communicate with and understand him. This is a simple and inexpensive way to help individualize your classroom. Not only do you learn more about each person in your class, but the feedback from students by way of the participation grading sheets helps you in turn evaluate what you are doing as a teacher. The participation sheet is a two-way communication tool: students write comments about themselves and their reaction to what is going on, and you write comments about them and your feelings about what is going on. These exchanges of comments allow you and the student to communicate each week on a one-to-one level. The comments also often lead to discussion between student and teacher after class.

### Conclusion

Basically then the benefits of participation grading can be put into two major categories: student benefits and teacher benefits. The student develops an increased sense of responsibility in terms of learning

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nutrition. If the alternative foods are given equivalent nutritive values, the predator will take the food items that are most common, regardless of type. A search image will not be developed, and a *Type II* curve will result. The *Type III* curve is more likely to appear if the nutritive values differ by a small factor and if the prey types can be distinguished.

For example, if prey A is given one nutrition point and prey B is given three, the predator will have to make a decision as to the optimal prey choice for maximum nutrition. At low densities of prey type A, prey B will be selected. At higher densities, prey A will be selected. This will generate the sigmoid function of *Type III*, when the number of prey A captured is plotted as a function of prey A's density. If the nutritive values of the alternative foods drastically differ, such as by a factor of 100, the predator will invariably consume only the preferred food, and a *Type II* curve will be generated.

### Modifications

These experiments lend themselves to many modifications. Students can examine the importance of crypsis, habitat heterogeneity, and distribution patterns (random, clumped, uniform). For example, obstacles such as jars can be placed on the table to increase the complexity of the environment. Or the importance of protective coloration can be explored. One possibility is to use animal predators. For instance, the experiments with chickens described by Hinds and Amundson (1975) could be altered to demonstrate functional responses.

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and behavior. Study habits are improved, self-motivation becomes more of a driving force for learning. The student sets and achieves short-term goals that improve learning opportunities and is better able to evaluate himself in terms of accomplishments in the classroom.

The teacher benefits by having a more involved group of individuals in his classroom, acquiring an additional tool for student evaluation, opening a direct line of communication with the student, and coming to know each student more fully as an individual. Further, fewer discipline problems occur, less time is spent for motivational activities, and time for testing and preparing for tests is shortened.

When the student and teacher benefits are taken together, an enjoyable learning situation results in which more is accomplished and in a more open, individualized atmosphere. The students know what is expected of them every day of the year in terms of behavior and, given this security and consistency, they tend to perform as expected and even exceed some of our expectations.

Participation grading has worked for us. We are sure it will benefit others as well. We welcome any visitors who would like to see this system in operation or would like to talk to us about it. We would be glad to answer any questions as to how we set up the procedure, the paperwork, and time required. If you try this system, please let us know your results and the improvements you have made on this approach.

## Grants for Scientific Equipment

NSF has announced the opening of its annual competition for grants to acquire scientific equipment needed to improve undergraduate science instruction at colleges, universities, and two-year institutions. The instructional scientific equipment program provides matching funds for institutions providing at least 50% of equipment costs. The deadline for submitting proposals for 1976 equipment grants is January 19, 1976.