

The Catalyst Facilitates Learning

"I PARTICIPATE lots in class discussions. I'm always saying 'what if?' I like to give my opinion." "I am aiming to do my best. If a class is dull I try to make it more interesting." "I like to learn—why things happen. To learn about things beyond the text. I like other people to learn also."

These statements were made by students identified as fulfilling the role of classroom catalyst. A recent study¹ of classroom group dynamics, described here, has pointed out the existence of the catalyst type of leadership. The effect of the catalyst's leadership is to influence other class members to participate more actively in class discussions and activities.

The catalyst himself participates eagerly and well in class activities. He adds "life" to the class, especially to class discussions. While he does not necessarily strive to become the leader in the classroom and while other types of student leadership may well exist in the group, the catalyst's enthusiasm toward the class stimulates the other class members to become more enthusiastic. The catalyst is skillful in relating to the other

class members. As a result he is popular with (although probably not the most popular) and respected by other members of the class. His actions in class serve as a model which the other class members may well emulate.

Students acting as catalysts were interviewed to learn more about their leadership behavior. As a group they were extremely verbal. They enjoyed expressing their ideas and did so very well. "Spontaneous" describes their reactions. They stated a liking for competition with others, but believed that self-competition pushed them to their best performances. These catalysts were task-oriented. In their interviews they constantly talked of trying. "I try to be a leader. I try to help. When I start something I try not to quit. I try real hard."

Persons identified as catalysts were found to be outstanding students. Not only were their grades high, but several of them had also participated in special school work such as going to Mexico during the summer to study Spanish.

These students were participants in school and community activities. Additional study of them, however, revealed that they were not necessarily leaders in

¹ James O'Hanlon. "Student-Generated Classroom Group Atmosphere and Its Influence on Achievement." Unpublished doctoral dissertation. Lincoln: University of Nebraska.

James O'Hanlon is Assistant Professor of Education, Ohio University, Athens.

school activities outside the classroom. Of the catalysts studied, less than half were highly identified by their peers as being among the "best leaders in their grade in school." A sizable number were rarely identified as being such "best leaders." Furthermore, many students named by their classmates as "best leaders" were not likewise identified by them as classroom catalysts. Thus, catalyst leadership in the classroom appears to be a different phenomenon from general peer group leadership.

Although catalyst-type leadership may exist in groups other than classroom groups, the characteristics which enable an individual to be a catalyst in the classroom do not necessarily enable him to lead in other types of groups. Conversely, leaders in other areas of school life may not be able to function as catalysts in the classroom.

A Study of the Classroom Group

The study in which the existence of catalyst-type leadership was established involved more than 100 classroom groups studying either science, English, or social studies and 3000 students in nine Nebraska secondary schools. The study consisted of three main parts. First, a scale was devised to measure the atmosphere or morale of classroom groups. A favorable or high atmosphere was assumed to be one in which students are able to satisfy certain needs associated with group membership and to react positively toward one another and the group. Students in a high atmosphere class feel at ease in the class and are friendly toward and respect one another. A high atmosphere group is an enthusiastic group.

The second step in the study was to attempt to discover factors creating high atmosphere. Analysis was undertaken of

the structure and interaction of classroom groups identified by the atmosphere scale as having high atmosphere. As part of this step a role identification questionnaire of the "Guess Who?" type was used. Study of responses to this questionnaire revealed that a cluster of four descriptions seemed to represent one role. Students frequently identified by their classmates on more than one of these descriptions invariably rated high on all four. It was not possible, however, to eliminate any one of the roles from the cluster without eliminating some students who scored high on the four descriptions combined. The four descriptions were as follows:

1. This person is always eager to take part in class discussions and class activities and helps to make them more interesting.
2. This class is involved in competition with another class to see which can produce the better class project. Only one week is available to prepare for the project. This class member would make a good chairman of the class for this project.
3. This person frequently comes up with new ideas in class discussions. If the class is stumped on some problem, he would think of a new way to try to solve it.
4. This person is quite enthusiastic and therefore adds a little life and even gaiety to the class.

Students fitting these descriptions obviously have classroom leadership potential. The decision to call them catalysts, however, was not made on this basis alone. These students were observed in action in the classes in which they had been highly identified on the four descriptions. There they were indeed found to be enthusiastic participants in class activities, and there was reason to believe that they stimulated their classmates to be more enthusiastic also.

Perhaps the most important evidence

of the catalyst's role in the classroom, however, was revealed through the comparison of classes with high atmosphere scores and those having low atmosphere scores. Twenty comparisons were made, each involving the class of a teacher with the highest atmosphere score and the same teacher's class with the lowest score. Catalysts were frequently found in high atmosphere classes but only rarely in low atmosphere classes. In three of the four cases where a catalyst was found in a teacher's low atmosphere class, more than one was found in his high atmosphere class. It thus seems possible that catalysts play a part in the development of high atmosphere.

To study the catalyst phenomenon, it was necessary to establish a standard concerning how highly identified on these four descriptions a student must be to be considered a catalyst. To do this the total number of times each class member was chosen for these descriptions was converted to a percent of the possible number of identifications he could have received (each student was allowed to choose any number of his classmates as fitting these descriptions). Thus, if all members of a class chose a certain classmate for each of the four descriptions, his percentage of possible identifications would be 100 percent. A distribution chart of the identifications received by over 1000 students in 40 classroom groups revealed a definite break in the distribution around the 65 percent level. Therefore, the standard was established that a student must receive from his classmates 65 percent of the possible number of identifications to be a catalyst. Fewer than three percent of the students in this study were thus recognized as catalysts.

The third step in this study of the classroom group consisted of testing the

hypothesis that "the mean achievement of the members of classroom groups with high atmosphere is higher than that of groups with low atmosphere." Comparisons were made of the high and low atmosphere classes of 20 teachers. Appropriate standardized test scores and semester grades were used to measure achievement in the course. Scholastic aptitude test scores and previous grades served as controls for ability. In 15 of the 20 comparisons the high atmosphere class achieved better than did the low atmosphere class.

A Different Type of Leader

The catalyst is a fascinating—and different—type of leader. For example, in this study there were several instances of a classroom group having more than one catalyst. There was, however, no evidence that these catalysts competed to become the "chief catalyst." In fact all the signs pointed to their supporting each other. Several catalysts who were in classes with other catalysts were among those interviewed. They expressed delight in being in class with these other students. Classes with more than one catalyst, however, did not have markedly better atmospheres than classes with only one catalyst.

It appears that a student who is a catalyst in one class is not necessarily so in another. Available evidence indicates that he probably would be so in some others, but not in all. Several catalysts indicated that their behavior in class was considerably influenced by their interest and ability in the subject being studied. The make-up of the class and the teacher's methods would probably also play important roles in determining whether a particular student would function as a catalyst.

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devoted to theory and concepts is justified. Balance and variety in format are provided through the use of the full page for the illustrations, the charts showing activities of the two or three groups of children at work during the same period, outlines of daily lesson plans, sample weekly plans, checklists and evaluation sheets.

The basic organization of the text in regard to selection of topics for development within each chapter pinpoints with clarity the major problems for study in language arts. The style of writing is simple and direct. There are a wealth of activities for developing each area of the language arts; many of these activities seem to take up more space than their importance would justify. The failure to use a variety of typography to emphasize major points under discussion weakens the presentation. At times, the interspersing of activities within the development of the theory of the topic distracts the reader and the continuity of ideas is lost.

The content for the curriculum in each phase of the language arts is presented in a variety of forms; for example, the concepts and the learning activities for developing the concepts are listed for courtesy while listening skills are presented in terms of levels of listening for different purposes. The extensive discussion of the development of handwriting will no doubt be of interest to the prospective teacher; suggestions are given for working with the left-handed child. The section on phonics leads from the history of phonics to the sequence of learning in phonics commonly found in the kindergarten through grade six. In spelling, much emphasis is placed upon errors and causes. Directions for games to motivate children are given for phonics and spelling.

Dr. Anderson has made a significant contribution to the Language Arts field through this book which can serve as a text or as a ready reference for teachers who are looking for new ideas and techniques. However, some of the procedures discussed may leave the teacher with a feeling that a pattern for teaching each phase is given rather than the suggestion of varied approaches in terms of purposes. There is little material on recent trends in teaching such as individualized instruction, team teaching, and large group instruction. The beginning teacher may wish to have additional material on the development of a unified program as outlined in the first chapter.

All teachers will find much helpful, theoretical and practical material in this book.

—Reviewed by DORA SIKES SKIPPER,
Associate Professor and Director, Off-Campus Instruction, School of Education, Florida State University, Tallahassee.

The Catalyst—O'Hanlon

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The relationship of the teacher to the catalyst is an interesting one. A few of the 25 teachers in this study had no catalysts identified in their classes, while other teachers had catalysts in almost every class. Whether this was the result of the teacher's actions in discouraging or encouraging catalyst-type actions or just the nature of the groups of students which those teachers had is not known. There was, however, evidence from statements made by teachers that some teachers feel quite negative toward catalysts. This is probably a result of the questioning and aggressive nature of the latter which the teacher may interpret as posing a threat to his leadership. Actual-

ly, the catalyst's leadership is supportive of the teacher's goals rather than a threat.

There are several definite values of catalyst leadership for a classroom group. Evidence has been presented that classes with catalysts in them have higher atmospheres than classes without catalysts. It has been shown that, in this study, classes with high atmosphere achieved better in subject matter learning than classes with low atmosphere. Thus catalysts may play a role in bringing about higher class achievement. This higher achievement could be the result of the more active participation of class members in discussions and other class activities which have been stimulated by the catalysts.

What is the implication of these ideas about catalyst leadership for the classroom teacher? He should be alert to the possibility and values of catalyst leadership. The teacher should allow and en-

courage such leadership to exist. He should allow students the chance to play a dynamic role in class activities. Many of the classroom groups in the study here reported had no student who met the standard for being considered a catalyst. Almost all of the groups, however, included one or two students who received considerably more identifications on the four descriptions of a catalyst than did their classmates. If the teacher will spot these students, he may be able to provide them opportunities to develop.

There are many questions about catalyst leadership which need to be subjected to further research. Perhaps the most important one is this: Would it be possible to identify students with catalyst potential and then to place them in low atmosphere classroom groups and thus produce more enthusiastic groups? Here may be a promising lead for grouping of students.

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