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Creating a Climate for Learning
(A Human Relations Approach)

By Robert W. Hayes, Ed.D.
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The variables that effect academic success are an elusive lot. They have often been studied, much discussed, overly tested, but seldom understood, (Latin, 1965). Recent studies at Boston University College of Basic Studies have indicated that the traditional intellectual criterion variables usually included in college admission only account for approximately 15% of the variance in academic achievement. These same studies indicate that a large part of the remaining variance can be accounted for using non-cognitive attitudinal and personality variables. In other words, studies seem to indicate that the traditional aptitudinal criteria for predicting academic success are severely limited in their ability to predict those who will succeed and those who will not succeed at the college level.

Students come to the University setting with well developed, definite attitudinal patterns concerning: (1) their ability to succeed in certain subject areas, and (2) their interest and motivation toward general academic success. When a student with marginal prior success in a specific area of study enters a university where he is required to take more of that subject, he will more likely be failure prone, not only because of aptitudinal problems but also because of negative attitudinal sets. This type of student often expends significant energies (concerning these subjects) in fighting the curriculum, the administration, himself, and the teacher. He has convinced himself that the
subjects have no relevance and that he has no ability in them; as a result, he resents taking them.

McClellan (1953) in his work concerning achievement motivation suggests that although general motivational patterns are developed early in life, changes can take place in these patterns and new levels of achievement motivation can be realized. In brief, McClellan (1965) lays down a set of 12 behavioral propositions that promote the incorporation of new motivational patterns into an already existing adult. It seems reasonable that these propositions not only promote change in achievement motivation, but might also be a key to the modification of any type of deeply entrenched learned behavior.

Although much space (in both the academic and popular press) is given to the growth of human relations training and activities, very little has been written concerning the use of such approaches to promote specific learning. Beginning with the propositions of McClellan, but incorporating the use of basic sensitivity and encounter principles, we suggest that environment can be created wherein the introduction of new behavior and new motivational patterns might be explored with a minimum of threat and a minimum of resistance (Glanz and Hayes, 1967, p. 259). The theoretical model used here is a phenomenological model (Snyggs and Coombs, 1959) suggesting that once the self-concept has been developed, an individual's behavior is primarily organized around defending and enhancing that concept. To encourage new behaviors, a warm, accepting, non-threatening climate must be developed so that a person will be willing to explore possible behavior changes. This is the same basic model as suggested in many counseling theories, particularly that of Rogers (1951).

The academic approach to encouraging behavior changes usually has been through remedial teaching and tutorial work. This approach has had limited success. Many professors report that results from tutoring are not worth the time spent. When tutoring does help, it usually involves a change in attitude toward the subject matter rather than just increased information memorization. The question we wish to explore is: Can a combination of climate setting and tutoring help students more than the typical educational approach?

A simple experiment was designed to test this hypothesis in terms of the modification of attitude, behavior, and performance in the area of physical science. The experiment dealt with freshman students who achieved at low levels (C- or less) during the first semester of a physical science course; we attempted to examine the possibility of modifying their attitudes toward science and their performance in science in the second semester by an approach combining the climate setting technologies of human relations experience, and expert science tutoring.

The College of Basic Studies uses a team approach whereby five
instructors are responsible for approximately 120 students in five discipline areas. From our team, the science professor in collaboration with the psychology/counseling professor, invited all students who had received C- or less in science during the first semester to join in an experimental non-credit seminar in science (38 students were invited). The seminar was described to them by letter, and they were all invited to attend an orientation meeting. At the orientation meeting, the small group, human relations, sensitivity experience approach was explained to them as one in which we would spend considerable time attempting to understand ourselves, the way we communicate with others, our attitudes concerning school, and our attitudes toward science in particular. We hoped, with this approach, to create a climate in which the students could explore the reasons for their poor performance in science. These sessions were scheduled once a week for three hours. They met initially in an informal seminar room, furnished with lounge type furniture, where coffee was available. The setting is important in its informality and its difference from a typical classroom. There were no blackboards, no books, no special assignments, no homework. The science instructor played a relatively passive role and was more a member of the sensitivity group than a leader or teacher. It was hypothesized that in about three to five sessions the external rationalizations for the student's lack of academic success, e.g. "the teacher does not like me," "I'm not interested in science," "I'm no good in math," "science has no relevance to my life," could be modified, allowing the students to look within themselves for the answers to their problems. At this point, it was hoped that the students would see that they might do better academically with help and that the help could be provided by the science professor who until this time had been just another member of the group. The next few sessions would be a combination of self-exploitation and thinking about science as a body of knowledge. As the students focused more on the science and less on their inability to learn it, we would change the location of the meetings to a more typical seminar room with tables, blackboards, etc. . . . At this point, the psychologist would become more a member of the tutoring group and the science teacher would become the leader. In fact, we followed this procedure very closely. The following is a description of the sessions from about the fifth session on from the perceptions of the science instructor.

After about five psychological sessions, we began spending the first part of the session on psychological exploration and then switching to tutorial work concerning material from the physical science course. By the end of the term the entire session was spent in tutorial study. There was no set format, but the tutorial sessions were largely concerned with two areas: answering direct questions concerning the
course material, and, of equal importance, attempting to identify from student questions and conversation some of the basic problems in their approach to the study of science. When problem areas were identified, we made an attempt to clarify, and to offer solutions to the problems.

Several examples should clarify the kinds of problems which arose. Many questions concerning specific areas of science such as heat loss-heat gain problems arose even though these problems had been laboriously covered in the regular fifty-minute class meetings. When we inquired why the students had not raised their specific questions in the regular section meetings they almost universally reported that they felt too embarrassed since most of the class had seemed to understand the discussion of the problems.

One problem area that became apparent in our discussions concerned the student's misinterpretation of the purpose of the science course. The physical science course they were taking is conceptually oriented, and uses a historical approach to the development of man's ideas concerning the nature of matter. The students, drawing on their past experience with other science courses concentrated on memorizing factual data in isolated packets, making no attempt to connect these isolated facts into some coherent sequence. Hence, even though some of the students had studied quite hard, they had missed the point of the course, and their examination performances reflected this. Another related misconception on the student's part concerned the examinations themselves. Since the intraterm and final exams consisted of multiple choice questions, they incorrectly assumed that the exams dealt exclusively with factual recall. To counter these misconceptions, we went over the intraterm they had recently taken question by question, and the students soon saw that the large majority of the questions called upon their ability to handle conceptual material, not to recall factual data. Several other sessions were concerned with demonstrating how the facts presented in the course fit together into a coherent sequence.

The smaller, more open group setting encouraged questions the students had concerning the "relevance" of the materials they were confronted with in the regular science course, and the purpose of studying many of the specific areas covered. Much of their dislike of the science course was reduced by more informal and detailed explanation of the goals of the course. For example, they were much more willing to attack specific problems once they understood that the problems, whether heat loss-heat gain or adiabatic, were not an isolated end in themselves, but their solution was aimed at improving their problem solving abilities, and exemplary of more general, and widely applicable problem solving techniques.

Evaluating this type of experience is extremely difficult. We think
there are two variables that need to be studied: one, any measurable change in achievement in science and, two, any changes in student attitude toward science as either reported by the student or observed by the instructors.

The basic design for this type of experimentation was outlined by Lewin (1946, 1947) and Marrow (1969) as action research. It should be noted that it does not meet the rigor of the major psychological or educational experimentation. However, we think that this need not overly concern the reader or the researcher for our objective here is to generate hypotheses rather than to prove them. It might be pointed out that most educational innovation is not based upon research at all, but upon an even less rigorous type of thinking than is evident in this particular design. However, the results are of interest. Thirty-eight students qualified for the special seminars by achieving C- or below in science for their first semester. Of these thirty-eight, nine chose to join the seminar and attended regularly. At the end of the semester, of the twenty-seven who did not take part, twenty-one stayed the same or went down in their science grade (77%); six went up (22%). Of the nine that took part, three went down or stayed the same (33%), six went up (66%). At first glance this looks impressive but we must point out that there was no control group, and that the motivational factors implicit in joining such a group and some type of Hawthorne effect may have influenced the changes. To investigate the motivational factors we looked at a comparable group of students with the same instructor the following year that were not offered the seminar option. Their achievement is as follows: thirty-six students were involved, that is they received C- or lower during their first semester of physical science. None of these students were offered the tutoring option. During the second semester, of the thirty-six, twenty-six stayed the same or went down in their science grade (72%) and ten went up (28%). This performance data compares very well with the group that did not elect to join the seminar experience. We assume that the motivation to succeed was the same in both samples, i.e., the original group from which the experimental group was selected and the group achieving at the same level the following year. This data suggests that the motivation to succeed is not enough in itself and the seminars did make a difference.

A more subjective analysis of the attitudes of the participants was also positive. All thought that the experience was worthwhile. All said that they had a more positive attitude towards the science course. Some even ventured that they liked science now, although it was still difficult for them.

Both the professors involved evaluated the experience positively. The psychologist, entering the experience with a positive set, thinking that learning was much more the setting of climate than the dissemi-
nation of data, had his biases supported. The science professor, however, entered the experience with a negative set to sensitivity experience. He also saw the experience as a very positive one and was happily surprised by the outcome.

We also gathered much data that can be reported only as anecdotes or critical incidents. These are the types of experience that influence the development of attitudes and we include just one as an example of the type of perception which is surely important but impossible to quantify. During one of the final sessions when the students were considering ways of measuring the distances to the stars and planets, one boy who had been extremely negative about science began to examine out loud his interest in knowing what it would be like to explore space and the desire he had (in fantasy, anyways) to be one of these explorers.

This article has been the description of a rather new and interesting approach in the combining of sensitivity experience to create a climate for learning and expert tutoring in a specific subject area. It was developed along the model described by Lewin as action research, attempting something new without disrupting an entire social system to conduct an experiment, and then evaluating your innovation as well as possible. Our experiences lead us to present the following hypotheses:

1. Students who have trouble with a specific subject can be helped to better their performance through a climate setting (sensitivity) experience and expert tutoring.

2. The change (academic and attitudinal) in these students will be greater than for those who have no special attention, and for those who have either sensitivity experience alone or tutoring alone.

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