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SELF-CONFRONTATION OF TEACHERS

by

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Contemporary techniques of teacher supervision such as Micro Teaching, Interaction Analysis, and simulation aim to change teachers through self-confrontation. Regardless of the particular technique employed, the basic process of self-confrontation is the same. Teachers are asked to compare data about their actual performances with their own ideals or goals. Assumptions are that there will often be discrepancies between ideal and the actual performances, and that being confronted with these discrepancies will motivate teachers to change their classroom behavior.

This process often fails because numerous psychological processes intervene between new insights of present classroom behaviors and changed classroom behaviors. One of these psychological processes has to do with the clarity of teachers' goals. Because of many day-to-day pressures, teachers often view their major task as keeping the classroom functioning smoothly. Teachers' goals often are conceived in very general, abstract ways or perhaps not thought about at all. When goals are unclear or non-existent, it is difficult to know when one is falling short of his objectives. Moreover, even when teachers do have clear goals, discrepancies will not arise if they lack skill in measuring the actual state of classroom affairs. Little constructive motivation is felt when either the ideal or actual condition is unclear.

A major challenge during supervision-consultation is helping teachers connect their changed insights with revised classroom actions. Teachers may wish to change, but be unable to behave differently in the classroom, for a variety of reasons. This paper deals with some of those reasons. Specified are some psychological reactions that can be expected when teachers are confronted with the quality of their own classroom performances; and suggested are some actions that a facilitator might take to focus teachers' energies on self-improvement.

Dissonance and Anxiety

Most teachers want to know how
well they are performing in the classroom. This desire is indicated by teachers' attempts to evaluate their performance by getting feedback from others. They most often get this feedback from students through tests, spoken statements, or non-verbal cues. Teachers themselves strive to assess how well they are doing in the classroom, and attempt to improve their performance. It is assumed that teachers want to change their actual performances to bring these more in line with cultural ideals as well as with their own ideals.

When there is a discrepancy between a person's (e.g., a teacher's) "ideal" he holds for his own performance and his "actual" performance, and when the teacher is clearly aware of his "ideal" and "actual"--and aware of the discrepancy between the two, he experiences what psychologists call "dissonance." His reaction to the dissonance is usually one of anxiety; how he copes with this anxiety indicates whether or not and to what degree he is positively motivated to improve his performance--i.e., motivated to narrow the gap between the "ideal" and "actual" performance.

Dissonance is thought of as being psychologically uncomfortable, giving rise to activity aimed at reducing or eliminating it. It is generally predicted that teachers want to reduce discrepancies between their ideal and actual performances (dissonance), not only because this is culturally valued, but also because it is psychologically desirable. According to social psychological theory, successful reduction of dissonance is rewarding.

**Dissonance Gives Rise to Anxiety**

When a teacher experiences dissonance, the magnitude of the discrepancy and the value the teacher places on his classroom performances will influence the amount of anxiety experienced. As used here, anxiety is a condition of observable agitation accompanied by such physiological observables as sweating palms, increased heartbeat, and verbal statements of unpleasantness. Anxiety is an important psychological process during self-confrontation.

Psychologists describe anxiety as a signaling function which warns of impending danger and enables one to exercise preventive measures in order to avoid pain. These...
preventive measures usually take the form of various defensive reactions which may be used flexibly or rigidly. When a teacher can use varied defenses in flexible ways chances are high that he will be adaptive and strive to bring his actual classroom performance closer to his ideal. But when the teacher's defensive structure is rigid and limited, it follows that his defenses will usually be inappropriate and thus interfere with self-confrontation.

Psychoanalytic theory conceives anxiety as unpleasant, as causing physical manifestations, and as being consciously experienced. Drive-like characteristics have been attributed to anxiety and the theory maintains that people will strive to avoid unpleasantness and to reduce the drive. In a similar vein, behavioristic learning theory looks at anxiety as a diffuse drive that has motivational characteristics (Spence and Taylor, 1951). Anxiety is viewed as pushing persons to action which will alleviate the tension of anxiety; this reduction of anxiety is assumed to be gratifying.

Even though the theories of social psychologists, psychoanalysts, and behaviorists conflict in many areas, in analyzing self-confrontation they do seem to form a common framework. They lead us to assume with regard to the self-confrontation of teachers that:

--If goals are clear and specific, there will be dissonance created when information shows a discrepancy between ideal and actual performances.

--Discrepancies must be resolved. If adaptive rather than non-adaptive postures are taken, teachers will want to reduce the discrepancies between their ideal and actual behavior by striving to move closer to their ideals.

--Such striving will occur with considerable vigor when teaching is a central value and when the magnitude of the discrepancy is great.

--When striving does occur, failures to move closer to the ideal state will produce anxiety that can be handled in a variety of ways--some productive and some unproductive.

Anxiety Influences Performance

Anxiety has definite influence on performance in virtually all
learning theories. It is defined as a psychological and physiological reaction to stress which, as mentioned before, has drive-like qualities. Behaviors performed that reduce anxiety are repeated because they decrease the discomfort. But anxiety influences performances, variously, depending on the degree of anxiety and the types of behavior being performed.

High amounts of anxiety facilitate simple motoric learning, especially physical movements requiring no cognitive processing (Spence and Taylor, 1953; and Farber and Spence, 1952). At the same time, heightened anxiety hinders the learning of more complex tasks, especially intellectual tasks (Beam, 1955; and Sarason and Mandler, 1952). Anxiety facilitates learning and performance only up to a point, the exact point depending on the nature of the task. High amounts of anxiety appear to be inappropriate for the kinds of performance shifts we hope to encourage in teachers through self-confrontation, although some level of anxiety appears to be necessary to facilitate an initial push toward change.

Anxiety as a Dynamic Process

While anxiety may be a significant personality attribute, its variance is so great from time to time for the same person that it is more fruitful to trace effects of the situation rather than to dwell on the history of the individual (Child, 1954). When a person is experiencing anxiety, the following seem to be in operation: a) How much stress the person perceives in the situation, b) His expectations of success or failure, c) How much tolerance he has for dissonance, and d) The behavioral responses elicited by specific situational cues. These variables also operate differently in the same individual depending upon group climate and demands of the task.

Research indicates that it is a mistake to consider anxiety as a simple, unidimensional personality attribute which is always detrimental to the learning of complex tasks. The intensity of high anxiety states in teachers experiencing self-confrontation can be harnessed and directed toward productive change, provided enough time is available and a framework is granted for this change. While a facilitator can do much to structure the situation for utilizing the level of anxiety productively, he should
be aware of the variety of defensive reactions teachers may have in dealing with anxiety created by self-confrontation.

Handling of Anxiety

Self-confrontation of teachers will inevitably lead to some anxiety. Most teachers will react defensively to the unpleasant anxiety experience, and the process of self-confrontation runs the risk of being terminated when the defensive reactions are strong. The following are some examples of defenses which teachers might likely express in order to handle their anxiety—without changing their classroom behaviors.

--- Perceiving Ideal Performance States as Unrealistic

Even though teachers might consider some ideal goals, such as individualized sequences for reading or active participation in discussion groups, as highly desirable, they may argue that such ideal events are impossible with the kinds of students or school settings with which they have to work. For example, they might say that one cannot use individualized reading sequences when over half of the class is disturbed, or that it is impossible to hold group discussions when students are undisciplined and irresponsible. Defensiveness is present when ideal states are not specific for teachers and therefore call for little striving for improvement. Teachers' anxieties are reduced by freeing them from any focus on classroom goals that are not being achieved.

A facilitator may help teachers to focus on a target for improvement by accepting their defensive reactions and by offering suggestions for modest changes. For instance, in the case of defensiveness about individualized reading, he might suggest that the teacher initiate a trial program for those students who can work well independently and then to try the program with other students as it gains prestige in the class.

--- Perceiving Information About Actual Performances As Invalid

Perhaps the most frequent way of reducing anxiety about deficiencies in one's actual performance is to view feedback itself as somehow invalid. For example, if a teacher is presented with results of questionnaires filled out by his
students, he might view the data as lacking significance because his students could not understand the questions. He may also argue that the data were collected on a particularly poor day when the students were frustrated about circumstances not under his control. In these defensive statements, the data are viewed by the teacher as having limited validity because of the situational circumstances within which they were collected.

Some teachers may raise the even more sophisticated critique that data should be collected several times to reveal reliable measures of the students' true feelings. And of course they may be correct. But in the case of a teacher defensively claiming all feedback is "invalid," a facilitator can handle these criticisms in several ways, perhaps by suggesting another data collection or by asking the teacher which findings, if any, he would agree are valid, and then by encouraging him to work with those.

-- Perceiving Information About Discrepancies Between Ideal and Actual Performances As Being Typical For All Teachers

In this case, teachers reduce their anxiety and desire to change by viewing dissonances as being generally experienced by all teachers. A teacher may not deny the importance of the ideal or the reality of his actual performance when discrepancies are revealed to him, but he still might feel that such discrepancies are inevitable and a basic part of teaching. Such resignation can reduce the desire for improvement and keep anxiety about one's own performance at a low level. Again, on the part of the facilitator--setting a short-range goal which would be possible to achieve could be helpful, while agreeing that some discrepancies are inevitable.

-- Perceiving Actual Performances As Pursuing Ideals Not Previously Stated

A frequent defense among teachers is to argue for the worth of what they are doing by introducing an idiosyncratic set of ideals. For example, although "direction" and "control" by the teacher may not encourage and elicit high student participation, these qualities can be viewed as teaching students "responsibility" and "how to listen." Elaborate rationalizations can be presented concerning the
world students will face when they leave school, thereby generally confirming present teaching practices as worthwhile, and helping to reduce anxiety about falling short of other significant ideals. Helping teachers to become explicit by having them rank order their own goals may help focus energies for improvement in a constructive way.

An extension of this sort of teacher reaction is the argument that in one sense the present classroom performance is not leading to a stated ideal; while in another sense, it is. So, for instance, some teachers might discuss their teaching as involving a planned strategy. They might rationalize that a good deal of teacher control will measurably frustrate the students, leading to rebellion which will encourage them to work more on their own. Through such logic a teacher reduces anxiety by viewing many of his actual performances as being in some sense connected to important ideal states. Suggestions of alternative strategies for reaching certain goals may help teachers adopt more effective strategies for achieving these same desired ends.

Anxiety Directed Toward Behavioral Change

Optimal amounts of anxiety are useful in helping teachers to change, provided their defensive reactions are handled adaptively. Research suggests additional practices that a facilitator might employ in directing teachers' anxieties away from defensiveness toward useful and productive changes. For example, subjects who show low tendencies for anxiety perform better on a set of complex tasks than subjects with high anxiety (Waterhouse and Child, 1952).

Subjects with high anxiety exhibit a number of behaviors that interfere with their performance. They are fidgety, less able to maintain constant eye contact, and cannot stick with the task for long periods of time. Interfering tendencies which arise out of frustrations also occur within teachers. For example, they are required to perform many frustrating tasks not directly associated with the education of students. Without strong administrative support for classroom innovations, teachers attempting to change will experience
frustrations that lead to interfering tendencies which will greatly hinder any personal program of planned change (Chesler, Schmuck, and Lippitt, 1963). Administrative support should help to reduce the frustrations that give rise to anxiety levels too diffuse to be useful. A facilitator should attempt to build group supportiveness among the teachers in a building who are undergoing self-confrontation.

Additional evidence indicates that anxiety can lead to effective performance if persons are given opportunities to release the tensions of anxiety. For instance, college students who have an opportunity to comment on test items perform better on their multiple-choice tests than students who do not have a chance to write comments. (McKeachie, Pollie, and Spiesman, 1955; and Calvin McGuigan, and Sullivan, 1957). The writing of comments on tests helps to relieve the students' anxieties and to bring them to the optimal point where they can work effectively. Students who are given permissive instructions, i.e., "Feel free to comment if you wish," do better than those who are told to make comments. These permissive instructions allow students to release some tensions, so that their anxiety interferes less and moves closer to an optimum point. Students who are required to write comments are more frustrated by the demands and, subsequently, less effective in their test performance.

When anxiety levels are high during self-confrontation, the facilitator should allow teachers considerable leeway in commenting on their own feelings. Also, an attitude of acceptance is helpful in relieving some anxiety felt because of large amounts of dissonance between ideal and actual classroom performances. The facilitator who notices that teachers are very agitated and confused by dissonant feedback should offer a few steps to follow as guides for reducing discrepancies between ideal and actual performances. At the same time, he should be aware that offering a framework to highly anxious persons can lead to the persons' dependency on him and a lack of curious searching and creativity. The facilitator should remember that although certain guidelines or environments may be required to reduce highly diffuse anxiety states, these should be gradually removed as the teachers
feel more secure and less anxious.

For teachers who experience low amounts of anxiety with dissonant information about themselves, much different strategies should be employed. Subjects with low anxiety typically perform better on complex tasks when stress is induced (Mandler and Sarason, 1952). Stress can be induced in three ways, all of which lead to improved behavior on the part of low-anxious subjects:

1) Subjects can be presented with immediate information about their success or failure; 2) They can be expected to finish the activity in an allotted period of time; and 3) They can be induced to become highly involved by being told that their performances measure their individual competencies. Under these same conditions of stress, highly anxious subjects experience confusion and are unable to perform effectively, unless they are granted a prolonged period of time to perform.

Facilitators who perceive teachers as experiencing low amounts of anxiety during self-confrontation might actively give feedback about success or failure, might tightly schedule the sequence of confrontation with clear expectations for performance changes at specific dates, and could work toward increases in the self-improvement of the teachers by having them manage more of the process themselves.

For highly anxious teachers, the facilitator would predict that such stress will be confusing and reduce effective performance at first. However, as research has shown, highly anxious subjects can perform effectively under stress, if they are allowed additional amounts of time for their performance to take place. Unfortunately, there is no research on the optimal time required to get highly anxious subjects to perform well under stress. From the writer's experience in training teachers, it is expected that there will be several hours of searching, defensiveness, general discomfort, and agitation before attention can be granted to the reducing of discrepancies between teachers' ideal and actual performance states.

When anxiety is high, the tensions experienced interfere with effective teaching. Even though highly anxious teachers may wish to improve their own classroom performances, their inner experience is in turmoil. They are confused
and unable to concentrate on the discrepant data. They will have strong desires to remove themselves from the painful situation and might deny the discrepancy, or at least think about other things to keep from being confronted by their inadequacies.

Signs of anxiety can be observed by carefully noting the teachers' reactions to discrepant feedback. Such manifestations as sweating palms, heavy smoking, fidgety movements, frozen expressions, and tense or jerky body movements are indicators of possible internal tension. Other, more verbal, manifestations are: making irrelevant points which lead discussion away from the confrontation; expressing negative attitudes toward the school; indicating emotional distance from the facilitator or from other teachers; and expressing cynicism about the worth of self-confrontation.

When the facilitator is confronted with signs of high anxiety, he should make an effort to reduce the tension. From a summary of psychological research, two major points suggest appropriate ways to reduce this tension:

-- Highly Anxious Teachers Should Be Allowed to Express Their Tensions In A Permissive, Supportive, And Structured Environment

Most teachers are the best judge of the level of anxiety that they themselves can handle. The facilitator should provide a leadership role that offers an open and supportive relationship, and that expects each teacher to find the best ways of changing his own classroom behavior at his own rate, in his own style.

However, this does not mean that facilitators should perform only very permissive, non-directive, laissez-faire roles. Most research on anxiety indicates that anxious persons do very poorly in highly structured settings. The facilitator should lead in a structured manner, always allowing for open expressions and changes in direction, while maintaining a firm approach to guiding the teacher systematically through self-confrontation. For some highly anxious teachers, such a structured leadership style might call for a very specific listing of steps that the teacher should take to improve his classroom behavior. Although
the content in such a list would be elicited from the teachers, the facilitator would suggest and implement completing the list. For other highly anxious teachers, facilitators might suggest weekly meetings with a sub-group of fellow teachers to talk generally about what is happening in their classrooms and what they might plan that would give help to one another.

**Highly Anxious Teachers Will React Dependently and Should Be Supported in Gradually Moving Toward Independence**

Highly anxious teachers will reveal their dependency by seeking out other persons, especially persons of high status, for the support of their ideas and actions. They will not give significant weight to their own ideas and skills. The facilitator should allow for and support expressions of dependency until anxiety has been reduced and comfort and security have increased. But it would be a serious mistake to allow teachers to remain dependent as self-confrontation progresses. The facilitator should strive to build independence by arranging for sub-groups of from two to four teachers to meet and to work on projects, and by encouraging teachers to work out their objectives and strategies for change individually while receiving feedback about their projects from the other teachers.

**Teachers' Self-Concepts**

Generally speaking, highly anxious subjects are pessimistic about their future performances and tend to blame themselves for failures, whereas subjects with low anxiety tend to place blame for failure on external conditions (Doris and Sarason, 1955). Highly anxious persons also hold strongly negative evaluations of themselves (Sarason, Davidson, Lighthall, Waite, and Ruebush, 1960). Under conditions of tension, highly anxious persons lack curiosity, are restrictive and controlled and are lacking in self-confidence. These results are true especially for persons who do not have a complex, highly differentiated view of themselves. This is because persons with a self-concept that is simple and undifferentiated tend to grade a threat as "high" or "low," or "present" and "not present." It is expected that teachers who think about the world simplistically have self-concepts influenced strongly
by a "good-bad" dimension. Such teachers would be threatened easily because, under tension, a very large part of their self-concept could be perceived as "bad."

Although many teachers as adults possess highly differentiated self-concepts, a large number may not think of themselves in a differentiated way as teachers. The self-concept one holds as a teacher grows out of experiences in that role, especially out of interpersonal experiences in the school. Generally, if the classroom performances have not been varied or frequently changed, dissonant information will strike hard at the teacher's self-view. Because of this possibility, the facilitator should attempt to support teachers in achieving a more differentiated view of themselves as teachers, as well as attempting to raise the teachers' levels of self-esteem.

A person's level of self-confidence varies concomitantly with how willing he is to be exposed to dissonant information (Canon, 1969). The less personal confidence persons have, the greater is their preference for consonant material, i.e., information that generally agrees with their own point of view. Persons, on the other hand, who are highly confident, usually perceive dissonant information (that which disagrees with their own position) to be useful and generally prefer receiving it to more consonant material. It is assumed that teachers with high self-confidence will be better able to cope with dissonant information about themselves and might even search out such information. Teachers with low self-confidence will be more defensive about confronting themselves and will prefer to emphasize consonant data about their performances.

A group activity that may raise teachers' self-esteem during self-confrontation is a "strength" exercise, sometimes referred to as an "up with people" activity. Each teacher thinks alone about his own strengths as a teacher and the strengths that he knows about in others in the group. No admissions or observations of weaknesses are allowed. The time spent alone is followed by a general sharing of strengths. It is important to emphasize strengths viewed in oneself as well as in one another, and for the group to discuss every person so that strengths are identified for everyone (Schmuck, Runkel,
Teachers' Rigidity

The persistence of similar responses when they are no longer appropriate has been shown to be related to anxiety, as a defense to relieve uncomfortable tensions. From varied types of research, we can draw some general conclusions about the role of rigidity during self-confrontation. The most salient factor about rigidity is the person's inability to change his behavior even in the face of continued failure. When teachers perceive teaching as very stressful or threatening, they will become anxious and be unable to think clearly, so they will revert to old teaching patterns even though such behavior will often be ineffective. A "rigidity syndrome" seen often among teachers is their "bellowing" or shouting to restore discipline. It is rare to find a teacher who feels this is an effective means of discipline, yet teachers still sometimes resort to such behavior under stress. Loss of self-esteem and stress can make any teacher temporarily "lose his cool," but it is a recurrent pattern among rigid teachers. Facilitators might help rigid teachers to diagnose their classroom situations so personal stress is anticipated, or they can help them to search for new alternative classroom behaviors, while attempting to raise their self-confidence.

Teachers' Motives

Emotional experiences during self-confrontation can become problems when any of the motivational states of achievement, affiliation, or power are frustrated. Frustrations can occur when the teacher perceives a discrepancy between his ideal level of achievement, affiliation, and power and his actual experiences in the classroom. Typical negative emotions resulting from frustrations of his ideal motives are feelings of inferiority, worthlessness, being put down, loneliness, betrayal, lack of interest and dullness. Such feelings will decrease the likelihood that the teacher will be able to cope with large amounts of dissonance and anxiety about his performance.

One important motivational process that has a bearing on self-confrontation involves striving for
achievement. Teachers with high levels of achievement motivation will likely be amenable to trying out revisions in their classroom behavior. These teachers have realistic levels of aspiration for themselves, have the desire to be involved in taking risks with their own teaching, and the preference for accurate feedback about how well they are doing. Teachers with little achievement motivation resemble persons with high levels of anxiety (Raphelson, 1957). They view their future performances in self-defeating ways. Either they set the limits of the situation so that they would easily succeed or so that they couldn't possibly succeed. Very low and very high levels of aspiration are associated with self-rejection, fear of failure, and high anxiety (Atkinson, 1957; and Cohen, 1954).

Facilitators can try to decrease teachers' feelings of inferiority and failure by encouraging them to set realistic levels of aspiration. This can be accomplished by asking teachers to specify their classroom goals in clear, behavioral language (Magar, 1962; and McClelland, 1969). Then, small groups of teachers can share their stated goals. The facilitator should ask members of these groups to monitor each other's level of reality. Statements of goals should be challenged until most members agree that each teacher's goals are realistic. The facilitator can help the groups to work constructively by prefacing their meetings with examples of overly ambitious and unrealistically low goals. He can also facilitate constructive discussions by offering teachers some communication skills to guide the feedback they give to one another (Atkinson, 1958; and Stotland, 1969).

The facilitator can attempt to decrease high levels of anxiety by lessening the fears teachers experience for failure and by increasing their hopes for success. Hope for success, which is an important ingredient of achievement motivation, involves setting realistic levels of aspiration and taking risks that can be achieved. In such cases, situations become rewarding rather than painful and are looked to with optimism. Pride of accomplishment is the most significant reward received when a hoped-for goal is achieved. The facilitator should attempt to overcome high levels of anxiety by
helping teachers set reasonable goals for improvement, and by training them to seek feedback that will help conform their accomplishments. The pride that is experienced from even a minor gain in performance should lead to stronger achievement strivings, which will reduce the destructive fears of failure that inhibit improvements.

A broader theory of motivation can be applied to the self-confrontation process. Three variables are involved in predicting how individuals will act in any given situation: the tendency to act is determined by 1) a motive force, 2) an expectancy factor, and 3) an incentive value of acting. The tendency for a teacher to modify his performances is a function of a motive for achievement, multiplied by his expectation of successfully accomplishing the change, multiplied by an incentive or reward for accomplishing the change. Thus, the facilitator should attempt to increase the expectancy and incentive variables, along with effort to raise the teachers' achievement motivation (Atkinson, 1966).

As teachers' feelings of personal achievement, of being liked by others, and being personally influential increase, willingness to expose themselves to discrepant information about their own teaching will increase. Although it is impossible to arrange self-confrontation that is completely void of emotional tensions, it should be possible to bring about supportive group norms and procedures that will mobilize emotional states for productive ends. The facilitator should attempt to make available means of gathering feedback during the changes so that teachers can have a sense of achieving personal goals. He can also plan to satisfy affiliative and power needs by helping to maintain a warm and friendly atmosphere in the group, and by allowing members to influence the directions the group takes.

Making Self-Confrontation Intrapersonal

Teachers will most likely attempt to improve their performances if they themselves perceive a discrepancy between their ideal and actual performances. In order for self-confrontation to be successful, this discrepancy should be internalized and arise out of the teachers' own curiosity about his teaching. Furthermore, teachers will
be able to change their performances more effectively if they experience moderate amounts of anxiety about their teaching, and if they are able to control the kinds of feedback they receive and the sorts of change processes they follow in reducing anxiety. Teachers also will be able to modify their performances more constructively if they possess self-confidence, set realistic goals for change, and hold high hopes for success.

A procedure for increasing the rational problem-solving abilities of teachers should be useful in attempts to internalize the self-confrontation process. The scheme involves five detailed stages (Schmuck, Chesler, and Lippitt, 1966). First, each teacher is asked to define a classroom problem in a very concrete way, making provisions within his statement for his own involvement in the problem. The problem should be stated in concrete and behavioral terms (Mager, 1962).

For the second step, a field of forces analysis is prepared (Coch and French, 1948). The teacher must initially reconsider his problem in terms of a goal state that is not being reached. A problem is defined as falling short of some ideal, as a discrepancy between ideal and actual states. In the force field drawing, a horizontal goal dimension is drawn with an ideal state at the right hand and its negative counterpart, the least desirable state, to the left. A vertical line is drawn perpendicular to the goal dimension to represent the point believed to be reality at present. Facilitating forces which are pushing toward the ideal state are drawn on the left of the vertical line. Restraining forces are drawn on the right. Theoretically, the facilitating and the restraining forces balance one another, and therefore, the vertical line is in equilibrium. If facilitating forces are added or restraining forces are taken away, the equilibrium will move to the right, toward the ideal.

Fellow teachers can help think up forces along with the target teacher, but it is important for the teacher to go beyond theory and guesswork and to collect data directly from the students about the problem. A set of tools has been prepared for helping teachers collect data from students (Fox, Luszki, and Schmuck, 1966). It is also well to keep in mind that data
from students will have a more positive effect on teachers than data received from any other source. In one well-executed experiment, student feedback led to a positive change among teachers, while feedback from supervisors produced changes in a direction opposite to the feedback (Tuckman and Oliver, 1968). In another experimental condition, supervisor feedback added nothing to student feedback when they were combined; indeed, feedback from supervisors tended to detract from feedback received from students. Self-confrontation is most likely to be internalized if teachers decide on what data to collect in their classrooms and if those data are collected from students.

The third step in the problem-solving sequence is for the teacher to "brainstorm" ways of increasing the facilitating forces or decreasing the restraining forces. Somewhat more emphasis is put on reducing restraining forces because such a procedure is more likely to support effective change. Brainstorming involves thinking up many different, and sometimes wild, ideas without evaluation. Again it would be valuable for the teacher to involve his students during this phase. After the brainstorming is exhausted, the teacher with the problem, along with his students, should judge which ideas are feasible and which ones should be dropped. Both brainstorming and force field analysis encourage a norm of seeking a variety of solutions before making a decision for action.

The fourth step involves actually trying out some new procedure for solving the problem, primarily an activity aimed at reducing restraining forces. A helpful procedure to employ prior to trying the new action in the classroom is role-playing (Chesler and Fox, 1966). Fellow teachers also can give consultative assistance, and if it is appropriate, facilitate some improvements in the new activity before it is used.

Finally, in the fifth step of the problem-solving sequence, the teachers solicit feedback from students about the effects of the new practices on them.
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