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Abstract

A study was conducted to test two hypotheses: (1) A systematic relation exists between estimates of autonomic balance and measures of emotional behavior, reported teaching behavior, perceived stress in teaching, and teaching effectiveness. (2) The teacher who perceives her role similarly to her principal's perception of it as compared with one who perceives her role differently from her principal's perception would be judged a more effective teacher, be more satisfied with teaching, have a greater feeling of accomplishment, and regard teaching as a less stressful career. Subjects were 63 female graduates of UCLA teaching in 24 California school districts. Estimates of their autonomic balance had been obtained in previous studies. Information on teaching behavior, role relationships, and organizational attitudes was collected using four inventories in interviews with teachers and with their principals. Results obtained through correlational analysis supported the first hypothesis but not the second. (Conclusions are drawn regarding various factors of temperament and organizational behavior; relations between personality factors and teacher behavior; and factors related to principals' evaluations of teachers and to teacher satisfaction with teaching. Implications are suggested regarding probable effects of attempts to change teacher affective behavior and regarding the need for better communication concerning teacher role.)  
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and ORGANIZATIONAL OUTPUTS

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PSYCHOPHYSIOLOGICAL CORRELATES OF FEMALE TEACHER BEHAVIOR  
and ORGANIZATIONAL OUTPUTS

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Simply put, an organization is a group of individuals working together in a differentiated structure, to achieve a common goal. In school organizations, teachers hold the key position for implementing educational goals. Understanding teacher behavior, therefore, is imperative if we are to improve the quality of our educational product. An individual's personality and temperament affect how he performs as a teacher. The extent and nature of conflict between his personality and the demands of his role influence his behavior in the classroom. Conflict in role expectations between teachers and their principals may cause confusion of goals and the means for achieving them as well as produce faulty evaluation procedures, stress and dissatisfaction.

The purpose of the present study was twofold: first, to investigate the relation between certain psychophysiological characteristics of a group of teachers to indices of teaching performance, emotional behavior and attitudes and second, to discover whether congruity of role expectations between teachers and their principals bore a relation to measures of teacher effectiveness, stress, satisfaction with teaching or goal achievement.

The psychophysiological characteristics under investigation, factors innervated by the autonomic nervous system, included sublingual temperature, palmar conductance, volar conductance, heart period and systolic blood pressure. When used in a linear weighted combination their standard scores yield an autonomic factor estimate.\* This factor estimate, or  $\bar{A}^{**}$  score, indicates the relative degree of balance or imbalance between the levels of activity of the two aspects of the autonomic nervous system, i.e., the parasympathetic nervous system (PNS) and the sympathetic nervous system (SNS). Relative imbalance between PNS and SNS functioning has been shown in previous studies to be associated with personality, neuroticism and psychosomatic disorders, (Sternbach, 1966; Eysenck, 1953; Cattell, 1957). Hence, we predicted, it would also be associated with individual's on-the-job performance.

The following hypothesis were tested:

- I. A systematic relation existed between estimates of autonomic balance and measures of emotional behavior, reported teaching behavior, perceived stress in teaching and teaching effectiveness.
- II. The teacher who perceived her role similarly to her principal's perception of the teacher role as compared with a teacher who perceived her role differently from her principal's perception of that role; would...
  - (a) be judged a more effective teacher

\* The relative weights of the autonomic variables are: sublingual temperature, .25; palmar conductance, .19; volar conductance, .10; heart period, .27; systolic blood pressure, .21.

\*\* Pronounced A-Bar.

- (b) be more satisfied with teaching
- (c) have a greater feeling of accomplishment
- (d) regard teaching as a less stressful career

The sample for this study consisted of sixty-three female graduates of UCLA, teaching in California in twenty-four school districts. Estimates of autonomic balance for each subject, obtained in two previous studies seven years earlier, were utilized as data in this study, (Lucio, Wenger and Cullen 1967; Balshan 1962).

III. These teachers belong to the only group of adult females for whom these data are available.

Information on teacher behavior, role relationships and organizational attitudes was collected through the use of four instruments, three of which were developed specifically for this study.

- (1) The Affective Behavior Inventory
- (2) The Organizational Attitudes Inventory
- (3) The Instructional Performance Scale
- (4) The Teacher Interest Inventory (Sorenson, 1966)

Each subject in the study was interviewed in person and all data were collected at that time. Each principal was also personally contacted and requested to complete the various instruments while the interviewer was present.

The results of this study, obtained through correlational analysis, revealed an association between measures of emotional behavior and the original estimates of autonomic balance ( $\bar{A}$  Scores) obtained seven years earlier. This supported the first hypothesis. There was a tendency for subjects having high  $\bar{A}$  scores (indicative of relative

PNS dominance) to report that they less frequently responded situations emotionally ( $r = -.48$ )\* and that their emotional responses were less intense ( $r = -.39$ ). Organizational behavior was also associated with  $\bar{A}$  scores. A high estimate (PNS dominance) was positively related to a preference for conformity and clear lines of organizational authority ( $r = .33$ ). In the classroom these teachers preferred to deal with intellectual matters rather than problems having to do with the psychological or social growth of individuals ( $r = .35$ ). To strengthen these findings reported by the teachers themselves, principals perceived high  $\bar{A}$  subjects as having a lower preference for dealing with goals related to socializing the individual ( $r = -.31$ ) or for dynamic, flexible organizational behavior ( $r = .32$ ). Conversely, low  $\bar{A}$  scores, (relative SNS dominance) were concomitants of greater perceived role preference, (how they preferred to act as teachers) and their role perception, (how they thought they were expected to act).

It may be concluded, therefore, that autonomic nervous system functioning is related to factors of temperament and to organizational behavior. The relevant areas of organizational behavior included the goal emphasis preferred by teachers, the type of organizational authority system with which teachers prefer to be associated, the manner in which individuals perceive their role, and the extent to which role expectations are distorted. It might be implied that greater knowledge of autonomic nervous system reactivity of individuals may prove valuable in understanding the dynamic behavior of organizational members

\*All r's reported were significant at the .05 level or beyond.

and help to identify areas of stress and conflict.

Other findings in this study revealed a relation between personality factors and teacher behavior. The teachers who considered themselves emotionally responsive were found to prefer a dynamic organizational structure ( $r=.25$ ) and obligations limited to specific teaching duties ( $r=.32$ ). Role conflict was found to be directly related to emotional responsiveness but in spite of this conflict, so was perceived achievement of teachers' personal goals.

The personality characteristic of intensity of emotional response was associated with a preference for a warm interpersonal style ( $r=.31$ ) and for achieving educational goals relating to the psychological and social development of individuals. Consistent with these findings, principals reported that intensely emotional teachers did not prefer didactic teaching methods ( $r=-.26$ ), a cool interpersonal style ( $r=-.26$ ), or a desire for a structured authority system ( $r=-.31$ ).

Emotional control as expected was inversely related to warm, demonstrative behavior ( $r=-.42$ ), and to stressing socialization ( $r=-.36$ ) or psychological ( $r=-.43$ ) goal behavior. Emotionally controlled teachers reported less conflict with principals in regard to organizational authority. They were more accurate in interpretation of principals' expectations ( $r=-.40$ ), expressed more teaching satisfaction ( $r=.40$ ) and had a less stressful teaching career ( $r=.38$ ).

It appears that the teacher who was conscious of her

feelings and more prone to display them also desired to achieve goals related to helping children to develop as individuals. On the other hand, the emotionally controlled individual was more conscious of what was expected of her, more apt to obey regulations handed down by those in authority and therefore perceived less stress in her dealings with the school organizations.

One might conclude from this that any attempts to change the affective behavior patterns of teachers will have repercussions not only in the way teachers behave with their associates but also in the curriculum in the classrooms.

Hypothesis II was not generally supported. Congruence between teacher role preference and principal role expectations was unrelated to any variable examined except perceived teacher personal goal attainment. Perhaps one of a teacher's personal goals is to have the same values as her principal.

Further investigation revealed that rated effectiveness was a product of congruence between a principal's ideal teacher behavior and how the particular teacher measured up to this ideal.

Principals gave high effectiveness ratings to teachers whom they thought used a discovery style of teaching ( $r = .39$ ),<sup>55</sup> had warm relations with children and dynamic organizational behavior. The high rated teachers also took care of children's problems in their classrooms instead of referring them elsewhere.

Agreement between principals and teachers as to the relative importance of varying educational goals was not related to rated effectiveness. In fact, individual teachers

and their principals did not agree upon the relative importance of educational goals and appeared unable to report the other's views. These data show that there is little communication within schools concerning the goals of education in general. However, when these goals are translated into statements relating to individual problems they become more meaningful to respondents. Principals and teachers do appear to communicate about specific problems. Whether or not a teacher deals with a problem in the classroom or refers it elsewhere does have an effect upon the principal's estimate of that teacher's effectiveness. High rankings were given to teachers who reported less relative preference for implementing cognitive goals and to those who saw their principals as preferring conforming organizational behavior (although, as I mentioned before, principals gave high ratings to those teachers whom they perceived as preferring dynamic behavior).

A sense of organizational goal achievement, personal goal achievement and lack of stress were all interrelated and positively related to the principal's evaluation of the teacher. High perceived personal goal achievement was also associated with a reported preference for emphasizing psychological and social goals in the classroom and congruence with principal preferences in this regard. A sense of teacher achievement of organizational goals was related to a role perception which emphasized psychological and social goals.

Lack of perceived teacher stress occurred when teachers agreed with principals concerning how to handle classroom problems.

Satisfaction with teaching appeared to be strongly related to the psychological trait of emotional control ( $r=.40$ ). It may be argued that the satisfaction reported by the subjects was not truly satisfaction but an attempt not to create conflict or to recognize undesirable feelings.

A comparison of responses of teachers and principals to the Teacher Interest Inventory showed that both groups tend to attribute to the other the same role preferences which they held themselves. Although in general both groups agreed upon the duties of the teacher, agreement between a given teacher and principal virtually did not exist. No significant positive correlation was found in thirteen of the fourteen areas of role behavior investigated. There was agreement only upon the relative desirability of a warm interpersonal style ( $r=.25$ ). In addition, no agreement existed between a teacher's stated role preference and a principal's perception of that preference. Conversely, teachers perceived a principal's role expectations accurately in only two areas (a) the relative importance of cognitive development and subject matter goals ( $r=.25$ ) and (b) the role of the teacher in relation to her obligations in the community ( $r=.33$ ). Even more important, there was a significant negative relation between principals' expectations regarding the desirability of student oriented goals and teachers' perceptions of these expectations.

These obtained differences may reflect the methodology of this study. They report what an individual states he believes on the one hand and what his actions convey to others on the other hand. Perhaps educators pay "lip service"

to values which they do not implement by their actions:

The disparity which existed between principals' role expectations and teachers' perception of these and between teachers' role preference and principals' perception of the teachers' behavior seem to substantiate this.

In any case it appears that inadequate communication exists regarding the teacher's role. No evidence was found in this study that the administrative function of mutual organizational goal setting had been carried out.

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