The relationship between job-related stress and individual ill-being was explored in a random probability sample of 200 public schoolteachers. The responses of these teachers were used to (1) test the hypothesis that stress is positively related to personal strain; (2) explore the theoretically derived stress categories of role demands, instructional problems, and interpersonal relations as predictors of individual strain; and (3) identify individual stressors within these categories that are predictors of strain. The results indicate that teacher stress is related to strain and that role demands are the most important predictor of strain, followed by instructional problems and then by interpersonal relations. In addition, structural role conflict, interrole conflict, role overload, student discipline, and interpersonal conflict were identified as individual predictors of strain.

Job Stress Among Primary and Secondary Schoolteachers

ITS RELATIONSHIP TO ILL-BEING

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Job stress can have adverse effects on a schoolteacher's psychological and physical well-being. Yet, while research in a variety of occupational groups has linked an array of stressors to ill-being (Kahn, 1981), studies of stress among primary and secondary schoolteachers are rare (Kyriacou and Sutcliffe, 1977).

The current trend towards declining pupil enrollment in many American schools accentuates the need for studies of teacher stress. This decline has led to a surplus of teachers in many school districts. As a result, most teachers experiencing high levels of

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stress are unable to quit their jobs — there is simply no place for them to go. Generally, they are unable to change jobs within their own districts, it is difficult to find teaching positions in other school districts (this also entails a loss of seniority), and the current high level of unemployment in the United States hampers those seeking nonteaching positions.

The recent upsurge in the popularity of conferences and workshops on teacher stress[1] may be due, in part, to the effects of declining student populations. Current attention by the national media to occupational stress[2] may also have contributed to the popularity of these gatherings. For whatever reasons, teachers appear to need information about job stress. In response to this need, the present study explores the relationship between job stress and ill-being among a sample of primary and secondary schoolteachers.

This study has three purposes. The first is to test the basic stress-strain hypothesis. Following from research and theoretical development on work and health carried out at The University of Michigan's Institute for Social Research (e.g., Caplan, 1972; Caplan et al., 1975; French and Kahn, 1962; LaRocco et al., 1980), *stress* is defined as any characteristic of the environment that poses a threat to the individual, and it is hypothesized to lead to strain. *Strain* is any adverse behavioral, psychological, or physiological outcome in a person. Examples include anxiety, depression, negative affect towards job and life, drug abuse, and somatic complaints. Strain is a short-term indicator of personal ill-being.

In order to develop useful theories about teacher stress, potent categories of teacher stress must be differentiated from less potent categories. Thus, the second purpose of this study is to obtain evidence about which of three theoretically derived categories of teacher stress is most strongly related to strain, which is next most strongly related, and which is least strongly related. These three

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categories are *role demands, instructional problems,* and *interpersonal relations*. This analysis is exploratory and no hypotheses are made.

Role demands are the behaviors expected of a person by virtue of his or her position in the organization (Katz and Kahn, 1978). These expectations may be set by superiors, coworkers, clients, or the focal person. Role demands may become stressful when expectations about a teacher's behavior are unclear (role ambiguity), when they are excessive (role overload), or when meeting one set of expectations makes meeting other expectations more difficult (role conflict). Ambiguity, overload, and conflict are assessed in the present investigation.

Research carried out in a wide range of occupational groups indicates that these three variables are consistently associated with psychological and physical ill-being (see Katz and Kahn, 1978 or Kahn, 1981 for a review). Further, a small body of research has linked teacher ill-being to role ambiguity (Dunham, 1976), to role overload (Lortie, 1975; McLaughlin and Shea, 1960; Olander and Farrel, 1970; Rudd and Wiseman, 1962), and to role conflict (Sorenson and Halpbert, 1968).

Instructional problems are sources of stress that arise from the core task of teaching students in a school setting. The six problems assessed in this category are difficulties with student discipline and competence, inappropriate procedures for student placement and for instruction, and inadequate standardized tests and grading systems. Since societal and occupational norms emphasize that students should receive the best possible education, teachers place great value on effective teaching (Lortie, 1975). As a result, instructional problems that hamper teacher effectiveness may be potent sources of stress.

In fact, research has identified student difficulties as a source of teacher stress and anxiety (e.g., Cichon and Koff, 1980; Coates and Thoresen, 1976; Depner, 1981; Kyriacou and Sutcliffe, 1978; McLaughlin and Shea, 1960). However, the remaining four instructional problems examined in this investigation have not yet been linked to teacher ill-being.

Interpersonal relations is the third category examined. The indicators of poor interpersonal relations measured are interpersonal conflict among staff members and lack of social support from supervisors and coworkers. Interpersonal conflict has been iden-

tified as a source of teacher stress in a number of studies (e.g., Lortie, 1975; Rudd and Wiseman, 1962; Sorenson and Halpert, 1968). In addition, lack of social support has been linked to ill-being in a variety of occupational groups (Caplan et al., 1975; LaRocco et al., 1980; LaRocco and Jones 1978). Some studies also suggest that social support may be an important predictor of teacher well-being (Depner, 1981; Dunham, 1976).

In addition to differentiating the predictive power of various categories of teacher stress, useful theories about teacher stress distinguish individual variables that are potent sources of stress from those variables that are not. Thus, the third purpose of this study is to identify individual stress variables within each of the three categories that are significant predictors of strain. Once again, this analysis is exploratory and no hypotheses are made.

METHODOLOGY

SAMPLE

The subjects in this study were 200 classroom teachers employed in 25 public schools. A two-stage procedure was used to select a sample representative of all full-time public school teachers (N = 54,918) in southeastern Michigan. A sample of 25 school buildings from this geographical area was selected. The 2,064 schools in the sampling frame were stratified with respect to type of school (elementary, middle-junior, and senior), county, and size (i.e., number of teachers). The probability of selecting each school was proportionate to the number of full-time teachers employed there. Thus, large schools were more likely to be selected than small schools. The sample consisted of eleven elementary schools, six middle or junior high schools, and eight senior high schools.

In the second stage, eight teachers were randomly selected from each of the 25 schools. Thus, although large schools were more likely to be selected than small ones in the first stage, in the second stage each teacher from a smaller school had a greater probability of selection than a teacher from a larger school. This sampling procedure maintained the equal probability of selection

principle for *teachers,* the unit of analysis in this study. Thus, each full-time classroom teacher in southeastern Michigan had an equal probability of selection. The response rate at the school level was 100%; all 25 schools selected in stage one agreed to participate in this study. Teachers in a given school who chose not to participate were replaced with other randomly selected teachers from the same school. Using this sampling-with-replacement procedure, it was necessary to draw 255 teachers to achieve the final target sample of 200.

MEASURES

A *structured interview* based on the 1977 Quality of Employment Survey (Quinn and Staines, 1979) was administered to all 200 participating teachers. Most of the questions on the structured interview were identical to those used by Quinn and Staines so that Michigan teachers could be compared to the national probability sample of American workers who participated in the 1977 Quality of Employment Survey. Because Quinn and Staines' instrument was a general one designed for all occupational groups, a questionnaire was also developed specifically for the teachers who participated in this study. This *self-administered questionnaire* was distributed to each teacher at the end of the interview. Of 200 questionnaires distributed, 182 were completed and returned. Items from both the self-administered questionnaire and the structured interview were placed in the scales used in this study. As a result, those scales that included items from the questionnaire were actually composed of responses from 182 rather than 200 teachers.

These scales were used to measure four role demands, six instructional problems, three interpersonal relations variables, and three strains. All items were measured with Likert-type response options. Internal consistency reliabilities for the 16 scales are presented in Table 1.

Role demands. The role demands assessed in this study were two forms of role conflict (structural role conflict and interrole conflict), role ambiguity, and quantitative role overload. Following from research conducted in hospitals (Georgopoulos and Cooke, 1978; Georgopoulos et al., 1979), structural role conflict is the degree to which teachers perceive that they do not have the author-

TABLE 1
Internal Consistency Reliabilities

Scale	Cronbach's Alpha
Structural role conflict	.58
Interrole conflict	.67
Role ambiguity	.60
Quantitative role overload	.68
Student discipline	.68
Student competence	.67
Student placement procedures	.63
Instructional programs	.74
Standardized tests	.55
Grading systems	.71
Interpersonal conflict	.63
Supervisory social support	.92
Coworker social support	.85
Job dissatisfaction	.71
Health	.81
Life dissatisfaction	.70

ity to do the work expected of them. One interview item and two questionnaire items constituted this scale. The questionnaire items were adapted from the Coughlan and Cooke School Survey (1974). A sample item is: "To what extent do the teachers in your school have enough authority to do the work expected of them?" Interrole conflict is the extent to which teachers perceive that their work and nonwork activities interfere with one another. Two interview items were included in this scale. A sample item is: "How much do your job and family life interfere with each other?"

Role ambiguity is a form of stress that arises from vague or unclear expectations from others. Four questions from the interview comprised this scale. A sample is: "On my job, I know exactly what is expected of me." The scoring for this scale was

reversed so that a high score represents a high level of role ambiguity.

Quantitative role overload occurs when teachers perceive that they are expected to do too much work. It was measured with a six-item scale that included four interview questions and two questionnaire items. The questionnaire items were obtained from Coughlan and Cooke's School Survey. A sample item from the questionnaire is: "My professional workload is fair and reasonable." The scoring for this scale was also reversed.

Instructional problems. The six instructional problems examined were student discipline, student competence, student placement procedures, instructional programs, standardized tests, and grading systems. These six scales were all based on items drawn from Coughlan and Cooke's School Survey, although some of the items were modified for use in this study. All items were placed in the questionnaire.

Student discipline was measured with a two-item scale. A sample item is: "The students in my school present an unusual amount of discipline problems." As with all of the scales used to measure instructional problems, this scale was scored so that a high score represented a high level of stress. Thus, a high score represents a lack of discipline. Student competence is the degree to which teachers perceive that their students lack motivation and intellectual ability. It was measured with a three-item scale. A sample is: "The students in my classes maintain high levels of performance." Teacher perceptions of inadequate student placement procedures were assessed with a two-item scale, including: "The students I work with are placed at the instructional level that is best for them."

The degree to which teachers thought the instructional programs used in their schools were appropriate was measured with a two-item scale. A sample item is: "To what extent does the school's instructional program enable students to work at the pace that is best for them?" The instructional problems arising from standardized tests were assessed with a three-item scale that included the following item: "To what extent are your student achievement and aptitude testing programs sensitive to the cultural differences among students?" Finally, the instructional problems associated with the system for grading students were measured

with a two-item scale. A sample is: "How adequate is the system for reporting student progress to parents?"

Interpersonal relations. The three scales used to measure interpersonal relations were interpersonal conflict, supervisory social support, and coworker social support. All of the interpersonal relations items were placed in the questionnaire.

Interpersonal conflict is the degree to which there is tension and disagreement among school staff. The three-item scale used to measure interpersonal conflict was a modified version of an instrument developed to assess interpersonal strain in hospital subunits (Georgopoulos et al., 1978). A sample item is: "In general, how much tension or conflict is there between the various people who work at your school?"

Social support was measured with scales used by Caplan and others (1975) in an investigation of job demands and worker health in 23 occupational groups. These scales were reverse coded so that a *high score* represented a *low level* of social support. The same set of four items was used to measure support from both supervisors and coworkers. For example, one item is: "How much is each of the following people willing to listen to your personal problems: (a) your immediate supervisor; (b) other people at work?" The responses obtained about the immediate supervisors were combined into a four-item scale labeled "supervisory social support." Most teachers (86%) reported that the school principal was their immediate supervisor. In addition, the responses about support from other people at work were combined into a four-item scale labeled "coworker social support."

Strain. Three indicators of strain were measured in the structured interview. These were job dissatisfaction, life dissatisfaction, and health. Job dissatisfaction is negative affect towards the job, and it was measured with a five-item scale. A sample item is: "All in all, how satisfied would you say you are with your job?" Life dissatisfaction is negative affect towards life in general. It was measured with a two-item scale, including: "In general, how satisfying do you find the way you're spending your life these days?" Both these scales were reverse-coded so that a high score indicated a low level of satisfaction.

The fifteen-item health scale was based on a measure developed by Belloc et al. (1971). Items from this instrument were

modified for use in Quinn and Staines' 1977 Quality of Employment Survey. These items were used in the present study. This scale included eleven questions about the frequency of somatic complaints such as sleep troubles, back pains, and poor appetite. In addition, it included two questions about the frequency of smoking and drinking. Finally, the scale included two global health questions about how healthy respondents felt overall and how much pep and energy they had lately. This scale was also coded so that a high score represented *poor* health.

ANALYSIS AND RESULTS

The purpose of the analysis was to test the hypothesis that stress was positively related to strain, to obtain evidence about which of the three categories of stress was most strongly related to strain, which was next most strongly related, and which was least strongly related, and to differentiate those variables within each category that were significant predictors of strain from those that were not. Pearson product-moment correlations and multiple regression were used to test these relationships. The correlations between stress and strain are presented in Table 2. The multiple regression analyses are found in Tables 3, 4, and 5. In addition, the correlations among all measures of stress are presented in Appendix 1.

THE RELATIONSHIP BETWEEN STRESS AND STRAIN

The results presented in Table 2 provide strong support for the hypothesis that stress is related to strain. Of the 39 relationships between stress and strain examined, 29 were statistically significant ($p \leqq .05$). Further support for this hypothesis is found in the multiple regression analysis presented in Tables 3, 4, and 5. Job dissatisfaction, health, and life dissatisfaction were regressed on the three different sets of stress variables, and six of the nine multiple r's obtained were statistically significant ($p \leqq .05$). Thus, the hypothesis that higher levels of stress are associated with high

TABLE 2
Correlations Between Stress and Strain

Stress	Strains		
	Job Dissatisfaction	Health	Life Dissatisfaction
Role Characteristics			
Structural role conflict	.41*	.27*	.17*
Interrole conflict	.30*	.26*	.22*
Role ambiguity	.25*	.17*	.09
Quantitative role overload	.34*	.25*	.16*
Instructional Problems			
Student discipline	.44*	.22*	.16*
Student competence	.34*	.14	.17*
Student placement procedures	.38*	.18*	.13
Instructional programs	.33*	.21*	.15*
Standardized tests	.25*	.17*	.11
Grading systems	.18*	.10	.09
Interpersonal Relations			
Interpersonal conflict	.29*	.16*	.00
Supervisory social support	.23*	.08	.14
Coworker social support	.01	.08	.07

*$p \leq .05$

TABLE 3

Multiple Regression of Job Dissatisfaction, Health, and Life Dissatisfaction on Role Demands

Role Demands	Job Dissatisfaction[1]		Health[2]		Life Dissatisfaction[3]	
	Beta	t	Beta	t	Beta	t
Structural role conflict	.32	3.92*	.18	2.07*	.12	1.31
Interrole conflict	.16	2.30*	.13	1.66	.17	2.18*
Role ambiguity	-.01	-.07	-.02	-.23	-.05	-.63
Role overload	.14	1.89	.19	2.33*	.10	1.18
Multiple r	.47		.36		.27	
R^2	.22*		.13*		.07*	

1. $F = 12.54\ (4, 174)\ p \leq .05$.
2. $F = 6.53\ (4, 174)\ p \leq .05$.
3. $F = 3.39\ (4, 174)\ p \leq .05$.

*$p \leq .05$

levels of physical and psychological ill-being was supported by both analyses.

STRESS CATEGORIES AND VARIABLES AS PREDICTORS OF STRAIN

Role demands. The results presented in Tables 2 and 3 suggest that the set of role demand variables was the most potent category of stress examined in this study. Of the 12 correlations between the role demands and the three strains presented in Table 2, 11 are statistically significant. Further, the multiple regression analysis presented in Table 3 indicates that the set of role demand variables was significantly related to job dissatisfaction ($R^2 = .22$, $p \leqq .05$), poor health ($R^2 = .13$, $p \leqq .05$), and life dissatisfaction ($R^2 = .07$, $p \leqq .05$).

The information presented in Appendix 1 indicated that the intercorrelations among the role demand variables were substantial. Thus, the multiple regression analysis presented in Table 3 provides more accurate estimates about which role demand variables explain a significant amount of variance in the dependent variables than does the correlational analysis (Cohen and Cohen, 1975). An examination of the individual beta weights obtained by regressing job dissatisfaction on the set of role demand variables indicates that the significant predictors were structural role conflict and interrole conflict. In addition, structural role conflict and role overload were significant predictors of health and interrole conflict was a significant predictor of life dissatisfaction.

Instructional problems. The results presented in Tables 2 and 4 suggest that instructional problems were potent forms of stress, although not as potent as role demands. Of the 18 correlations between instructional problems and the three strains presented in Table 2, 13 were statistically significant. In addition, the multiple regression analysis presented in Table 4 indicates that the set of instructional problem variables was significantly related to job dissatisfaction ($R^2 = .29$, $p \leqq .05$) and poor health ($R^2 = .09$, $p \leqq .05$) but not to life dissatisfaction ($R^2 = .06$, n.s.).

Student discipline was the only significant individual predictor of job dissatisfaction. Although all of the instructional problems were significantly correlated with job dissatisfaction, student dis-

TABLE 4

Multiple Regression of Job Dissatisfaction, Health, and Life Dissatisfaction on Instructional Problems

Instructional Problems	Job Dissatisfaction[1]		Health[2]		Life Dissatisfaction[3]	
	Beta	t	Beta	t	Beta	t
Student discipline	.35	4.59*	.16	1.84	.13	1.47
Student competence	.06	.62	-.02	.02	.09	.85
Student placement procedures	.17	1.76	.02	.17	-.00	.00
Instructional programs	.13	1.42	.13	1.30	.09	.89
Standardized tests	.06	.73	.03	.33	.00	.00
Grading systems	-.13	1.68	.09	1.06	.02	.17
Multiple r	.54		.29		.25	
R^2	.29*		.09*		.06	

1. $F = 11.35\ (6, 163)\ p \leq .05$.
2. $F = 2.60\ (6, 163)\ p \leq .05$.
3. $F = 1.75\ (6, 163)$ n.s.

*$p \leq .05$

TABLE 5

Multiple Regression of Job Dissatisfaction, Health, and Life Dissatisfaction on Interpersonal Relations

Interpersonal Relations	Job Dissatisfaction[1]		Health[2]		Life Dissatisfaction[3]	
	Beta	t	Beta	t	Beta	t
Interpersonal conflict	.21	2.58*	.09	1.05	.02	.17
Supervisory social support	.15	1.88	.08	1.05	.13	1.56
Coworker social support	-.07	.86	.02	.02	.05	.58
Instructional programs	.13	1.42	.13	1.30	.09	.89
Multiple r	.30		.14		.14	
R^2	.09*		.02		.02	

1. F = 5.35 (3, 168) $p \leq .05$.
2. F = 1.11 (3, 168) n. s.
3. F = 1.14 (3, 168) n. s.

cipline is the only variable that explains a significant amount of the variance in job dissatisfaction. This is due to fairly high intercorrelations among the predictor variables (see Appendix 1). None of the individual beta weights obtained by regressing health on instructional problems were significant, although the relationship between the set of predictors and the dependent variable was significant. This indicates that no single variable explained a significant amount of the variance in health, but that the set of variables was a significant predictor (Cohen and Cohen, 1975).

Interpersonal relations. The findings presented in Tables 2 and 5 suggest that the set of interpersonal relation variables was the least potent category of stress examined in this study. Only three of the nine correlations between interpersonal relations and strain were statistically significant (see Table 2). Further, the multiple regression analysis (see Table 5) indicates that the set of interpersonal relations variables was significantly related to only job dissatisfaction ($R^2 = .09$, $p \leqq .05$) but not to poor health ($R^2 = .02$, n.s.) or life dissatisfaction ($R^2 = .02$, n.s.). Further, an examination of the beta weights obtained by regressing job dissatisfaction on the set of interpersonal relation variables indicates that the only significant predictor was interpersonal conflict.

DISCUSSION

The findings from this study support the hypothesis that teacher stress is related to strain. The evidence also suggests that role demands were the most potent forms of stress, followed by instructional problems, and then by interpersonal relations. In addition, the role demands found to be significant predictors of strain were structural role conflict, interrole conflict, and role overload. Student discipline (an instructional problem) and interpersonal conflict (a measure of poor interpersonal relations) were also significant predictors of strain.

The general hypothesis tested in this study was based on the assumption that stress causes strain. Thus, job stress → strain. As in other research using this model, job dissatisfaction was defined as a form of general psychological strain. However, LaRocco et al., (1980) have proposed an alternative model that was not tested

here. They assert job dissatisfaction is a form of job-specific strain that can, in turn, lead to general psychological and physical strain such as anxiety or high blood pressure. Thus, job stress → job-specific strain → strain. This model could be tested in future research with path analytic techniques.

In addition, a number of methodological problems occurred in this study that could be avoided in future research. First, most of the stress measures were composed of no more than three items. The instructional problem scales suffered most from this difficulty: four of the six scales were composed of only two items. The set of instructional problem variables also suffered from fairly high multicollinearity (mean Pearson correlations = .38). Finally, the internal consistency reliabilities for the stress measures were low. This was particularly true of structural role conflict (alpha = .58) and of standardized tests (alpha = .55).

Despite these methodological problems, a number of interesting issues were raised by the results of this study. As in studies of other occupational groups, role demands were potent predictors of strain (Caplan et al., 1975; Kahn et al., 1964; Sales 1969). The two forms of role conflict were most powerful. The substantial relationships between interrole conflict and job and life dissatisfaction may reflect, in part, the competing demands that many teachers must face between work and family roles. Since 78% of the teachers were married and 63% were female, perhaps these findings reflect the stress of balancing the demands of two competing roles: wife and teacher. While men also face these competing demands, women in America still tend to do the greater share of domestic chores.

Although a search of the literature yielded no stress research on structural role conflict, it was the most potent predictor among the role demands. Further, in addition to the statistical analyses reported above, many of the teachers interviewed mentioned structural role conflict spontaneously. For example, some complained that they were expected to provide a quality education to their students, yet were not allowed to use the best instructional methods or educational materials. Other teachers lamented that while they were responsible for maintaining discipline, they did not have the authority for doing so. These findings have interesting implications because this form of stress appears to arise from the

situation (an inadequate fit between the authority and role structures) and not from characteristics of teachers. As a result, eliminating structural role conflict requires the use of organizational change efforts rather than personal stress management techniques. Although changing the teachers may attenuate the negative effects of structural role conflict, it is better to treat the problem rather than the symptom.

Quantitative overload was also a significant predictor of poor health, which is consistent with past research (e.g., Caplan et al., 1975; Sales, 1969). In order to cope with quantitative overload, a teacher is often forced to do a low quality job or not to finish his or her work. Both of these strategies may result in lower quality teaching, which is distressing to most teachers and which in turn may cause a variety of stress-related somatic complaints such as high blood pressure and insomnia. Alternatively, an overloaded teacher may simply choose to work too much, which may cause strain directly (perhaps he or she will not get enough sleep). It may also cause strain indirectly through interrole conflict; the teacher may take work home that interferes with family or leisure activities.

While the instructional problems category was not as powerful a predictor of strain as the role demands category, the correlation between student discipline and job dissatisfaction was the largest observed between individual stress and strain variables ($r = .44$). In addition, student discipline was the only significant beta weight obtained in the multiple regression of job dissatisfaction on instructional problems. This finding is not unexpected since a substantial body of research has identified student discipline problems as a potent source of teacher stress (Cichon and Koff, 1980; Coates and Thoresen, 1976; Depner, 1981; Kyriacou and Sutcliffe, 1978; McLaughlin and Shea, 1961).

Perhaps this form of stress is so potent because of the severe consequences a teacher must face if he or she is unable to maintain discipline. As Lortie (1975: 151) states:

> There is universal agreement that the teacher must establish and keep sovereignty over classroom affairs; pedagogical experts, school administrators, and the public agree on this (Gallup, 1969). School practices reinforce it, and beginning teachers soon

learn that if their capacity to maintain "classroom control" is in doubt they may be fired. Waller's argument is probably as true today as it was in his time — teachers who fail to keep control over students soon find that teaching is intolerable work (Waller, 1961).

The findings from this study also suggest that social support may be less important to teachers than to members of other occupations. Coworker social support was not significantly related to any of the three strains. Lortie (1975) provides some relevant theory and data. He asserts teachers are socialized to be individualists, that they receive their psychological rewards in the isolation of the classroom, and that they can work effectively without the help of other teachers. Further, findings from Lortie's Five Towns study support these assertions; approximately half (45%) of the respondents reported that they had no contact with other teachers in the course of their work. Thus, coworker social support may simply be less readily available to teachers than to members of other occupations.

However, it is difficult to explain why lack of supervisory support was not a significant predictor of strain. While teachers do not work under close supervision, most of them must depend on their immediate supervisors, usually the principal, for some assistance. For example, the principal is the ultimate authority in student discipline. The nature of a classroom teacher's craft may once again provide an explanation; the isolated teacher may simply not rely greatly on principal support because he or she is usually unable to leave the classroom. As a result, teachers may simply learn to get along with less assistance, advice, and emotional support from their supervisors than members of other occupations. In addition, teachers may not depend on supervisory social support for another reason: they may feel reluctant about confiding in their principals for fear this may be viewed as a sign of incompetence.[3] Such fears may be justified since principals often have formal responsibility for evaluating teacher effectiveness. However, further research is needed on the relationship between lack of supervisory support and teacher stress. The results of this study provide inconclusive evidence about the importance of supervisory social support to teachers. It was correlated with job dissatisfaction ($r = .23$, $p \leqq$

.05). In addition, while it was not a statistically significant predictor of job dissatisfaction, it did approach the generally accepted criteria ($t = 1.88$, $p \leqq .06$).

The relationship between teacher stress and strain must be accurately described before effective techniques can be developed for the reduction of teacher stress. This study is one step in that direction. However, future investigations should use longitudinal and quasi-experimental designs. Although these methods are expensive and time-consuming, they do provide the most valid data. Moreover, researchers may be able to capitalize on the current high level of interest in this topic among teachers and administrators by designing, implementing, and rigorously evaluating organizational interventions aimed at reducing teacher stress. The results of the present study suggest that interventions designed to reduce structural role conflict, interrole conflict, role overload, and student discipline problems may be the most useful.

APPENDIX 1
Correlations Among all Measures of Stress

	1	2	3	4	5	6	7	8	9	10	11	12
Role Demands												
1. Structural role conflict												
2. Interrole conflict	.20*											
3. Role ambiguity	.51*	.18*										
4. Quantitative role overload	.40*	.36*	.26*									
Instructional Problems												
5. Student discipline	.33*	.18*	.18*	.32*								
6. Student competence	.32*	.19*	.30*	.27*	.51*							
7. Student placement procedures	.36*	.20*	.35*	.30*	.33*	.58*						
8. Instructional programs	.33*	.20*	.29*	.27*	.25*	.47*	.65*					
9. Standardized tests	.24*	.16*	.26*	.30*	.25*	.23*	.46*	.42*				
10. Grading systems	.27*	.12	.23*	.27*	.20*	.24*	.37*	.37*	.40*			
Interpersonal Relations												
11. Interpersonal conflict	.41*	.19*	.29*	.21*	.30*	.17*	.32*	.33*	.28*	.23*		
12. Supervisory social support	.41*	.06	.30*	.23*	.29*	.20*	.30*	.40*	.33*	.15*	.40*	
13. Coworker social support	.13	.00	.09	-.09	.14	.09	.11	.14	.07	.07	.17*	.17*

*$p \leq .05$

NOTES

1. For example, see Newell, R.C. (1978-1979) "Teacher stress. Warning: teaching may be hazardous to your health." Amer. Teacher 16-17; LeLierre, R. (1980) "Forum on combating stress lures teachers." Ann Arbor News, March 1.

2. For example, see "Job burnout: growing worry for workers, bosses." U.S. News and World Report (1980) 88; Carr, R. (1979) "Ten ways to release tension." The Saturday Evening Post (1979: 251); Goleman, D. (1979) "Positive denial: the case for not facing reality." Psychology Today 13.

3. This alternative explanation was suggested by an anonymous reviewer.

REFERENCES

BELLOC, N. BRESLOW, L. and J. HOCHSTIEN (1971) "Measurement of physical health in a general population survey." Amer. J. of Epidemiology 93: 328-339.

CAPLAN, R. D. (1972) "Organizational stress and individual strain: a social-psychological study of risk factors in coronary heart disease among administrators, engineers, and scientists." Dissertation Abstracts Int. 32: 6706b-6707.

——— S. COBB, J. R. P. FRENCH, R. V. HARRISON, and S. R. PINNEAU (1975) Job Demands and Worker Health. No. (NIOSH) 75-106. Washington DC: U.S. Department of Health, Education, and Welfare.

CICHON, D.J. and R. H. KOFF (1980) "Stress and teaching." National Assn. of Secondary School Principals Bull. 64: 91-104.

COATES, J. T. and E. T. THORESEN (1976) "Teacher anxiety: a review with recommendations." Rev. of Educational Research 46: 159-184.

COHEN, J. and P. COHEN (1975) Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. New York: John Wiley.

COUGHLAN, R.J. and R. A. COOKE (1974) "Work attitudes," in H.J. Walberg (ed.) Evaluating Educational Performance. Berkeley, CA: McCutchan.

DEPNER, C. (1981) "Social support and lower adaptation." Presented at the annual meeting of the American Psychological Association, Los Angeles, August.

DUNHAM, J. (1976) "Stress situations and responses," in Stress in Schools. Hempstead, England: National Association of Schoolmasters.

FRENCH, J. R. P. and R. L. KAHN (1962) "A programmatic approach to studying the industrial environment and mental health." J. of Social Issues 18: 1-47.

GALLUP, G. How the Nation Views the Public Schools. Princeton, NJ: Gallup International.

GEORGOPOULOS, B.S. and R. A. COOKE (1979) Conceptual-Theoretical Framework for the Organizational Study of Hospital Emergency Services. Ann Arbor, MI: Institute for Social Research, Working Paper Series.

——— (1978) A Comparative Study of Hospital Emergency Services: Special Report to Participating Institutions. Ann Arbor, MI: Institute for Social Research.

——— and Associates (1980) A Comparative Study of the Organization and Performance of Hospital Emergency Services. Report Series. Ann Arbor, MI: Institute for Social Research.

KAHN, R. L. (1981) Work and Health. New York: John Wiley.

——— D. WOLFE, R. P. QUINN, J. SNOEK, and R. ROSENTHAL (1964) Organizational Stress. New York: John Wiley.

KATZ, D. and R. L. KAHN (1978) The Social Psychology of Organizations. 2nd ed. New York: John Wiley.

KYRIACOU, C. and J. SUTCLIFFE (1978) "Teacher stress: prevalence, sources, and symptoms." British J. of Educational Psychology 48: 159-167.

——— (1977) "Teacher stress: a review." Educational Rev. 29: 299-306.

LaROCCO, J. M. and A. P. JONES (1978) "Coworker and leader support as moderators of stress-strain relationships in the work situation." J. of Applied Psychology 63: 629-634.

LaROCCO, J. M., J. S. HOUSE, and J. R. P. FRENCH (1980) "Social support, occupational stress, and individual well-being." J. of Health and Social Behavior 21: 202-218.

LORTIE, D. (1975) Schoolteacher: A Sociological Study. Chicago: Univ. of Chicago Press.

McLAUGHLIN, J. W. and J. T. SHEA (1960) "California teachers' job dissatisfaction." California J. of Educational Research 11: 216-224.

OLANDER, H. T. and M. E. FARREL (1970) "Professional problems of elementary teachers." J. of Teacher Education 21: 276-280.

QUINN, R. P. and G. L. STAINES (1979) The 1977 Quality of Employment Survey. Ann Arbor, MI: Institute for Social Research.

RUDD, W. G. A. and S. WISEMAN (1962) "Sources of dissatisfaction among a group of teachers." British J. of Educational Psychology 32: 275-291.

SALES, S. M. (1969) "Differences among individuals in affective, behavioral, biochemical, and physiological responses to variations in workload." Dissertation Abstracts International 30: 2407-B.

SORENSON, G. and R. HALPBERT (1968) "Stress in student teaching." California J. of Educational Research 19: 28-33.

WALLER, W. (1961) The Sociology of Teaching. New York: Russell and Russell.