Organizational Climate and Student Achievement: A Parsimonious and Longitudinal View

ABSTRACT: Health and openness metaphors are used to develop measures of organizational climate, in addition to socioeconomic status, Environmental Press, Collegial Leadership, Teacher Professionalism, and Academic Press are aspects of climate that make significant, independent contributions to student achievement in basic skills and explain a substantial amount of the variance. Moreover, the influence of school climate on achievement is enduring over several years. The proposed climate framework underscores important linkages between the institutional, managerial, technical, and client levels in service organizations such as schools.

Organizational climate has a rich history in the study of educational organizations. Most of that research, however, has focused on elementary schools (Halpin and Croft, 1963), secondary schools (Hoy, Tarter, and Kottkamp, 1991) and colleges and universities (Pace and Stern, 1958). The current research examines the climate of middle schools; its purpose is to identify those attributes of middle school climate that explain levels of student achievement in reading, mathematics, and writing. More specifically, this paper reviews two major views of organiza-
tional climate, synthesizes and develops a parsimonious perspective of school climate, and demonstrates the usefulness of this new perspective in predicting school achievement over time.

Middle schools were selected for several reasons. First, middle schools have been neglected despite the fact that they are an important part of contemporary American education. Second, although middle schools are organized for the expressive development of students, academic achievement remains an important objective for all public schools including the middle school. Third, earlier research (Hoy, Tarter, and Kottkamp, 1991) demonstrated the importance of school climate in student achievement at the high school level; we were interested in testing such relationships in middle schools. Finally, the state had collected standard achievement data for all middle schools, and we were able to tap into that database for our study.

ORGANIZATIONAL CLIMATE

Climate is conceived as a general concept to capture an enduring quality of organizational life. For example, Taguiri (1968, p. 23) notes that "a particular configuration of enduring characteristics of ecology, milieu, social system, and culture would constitute a climate, much as a particular configuration of personal characteristics constitutes a personality." Thus, personality is to individual what climate is to organization. Over the years, some consensus about the nature of climate has emerged (Poole, 1985). Organizational climate is a characteristic of the entire organization (or major subunits); climate is a descriptive rather than evaluative term; climate is based on collective perceptions of members; climate arises from routine organizational practices that are important to the organization and its members; and climate influences members' behavior and attitudes. Put simply, organizational climate is the set of internal characteristics that distinguishes one organization from another and influences the behavior of organizational members. More specifically, school climate is a relatively enduring quality of the entire school that is experienced by members, describes their collective perceptions of routine behavior, and affects their attitudes and behavior in the school (Hoy, and Miskel, 1996).

TWO PERSPECTIVES ON SCHOOL CLIMATE: OPENNESS AND HEALTH

A number of instruments have been developed to view the organiza-

Openness of School Climate

Perhaps the most well-known conceptualization of school climate is the early work of Halpin and Croft (1963). They described organizational climate as the "personality" of the school and viewed it along a continuum from open to closed, much the same way that Rokeach (1960) depicted the belief systems of individuals as open and closed. Halpin and Croft's strategy was to develop and validate a descriptive questionnaire that identified important aspects of teacher-teacher and teacher-principal interactions. The results of their factor analytic study (Halpin and Croft, 1963; Halpin, 1966; Hall, 1972) yielded the Organizational Climate Description Questionnaire (OCDQ), which mapped six climates along an open to closed continuum: open, autonomous, controlled, familiar, paternal, and closed.

The distinctive feature of an open climate is its high degree of authenticity; the principal and faculty are genuine in their behavior. The principal leads by example, providing the proper blend of structure and direction as well as support and consideration, the mix dependent upon the situation. This is what Argyris (1957) called "reality-centered" leadership. Teachers work well together and are committed to the task at hand. Given the "reality-centered" leadership of the principal and a committed faculty, there is no need for burdensome paperwork, close supervision, impersonality, or a plethora of rules and regulations. Acts of leadership emerge easily and appropriately as needed and from both teachers and the principal. The open school is neither preoccupied exclusively with task achievement nor social-needs satisfaction; both emerge freely.

The closed climate is virtually the antithesis of the open. The principal and teachers simply go through the motions, with the principal stressing routine trivia and unnecessary busywork, and the teachers responding at minimal levels and exhibiting little satisfaction. The principal's ineffective leadership is seen as close supervision, that is, impersonal, aloof, and inconsiderate. These misguided administrative tactics produce teacher frustration and apathy. The behavior of both principals and teachers in the closed climate is not genuine; there is much game playing and posturing. In brief, inauthenticity pervades the atmosphere of the school.
Although the openness framework and its measure have been widely used to study school climate (Anderson, 1982; Miskel and Ogawa, 1988; Hoy, Tarter, and Kottkamp, 1991), the perspective has a number of limitations. For example, questions have been raised about the validity of the original Halpin and Croft instrument (Hayes, 1973; Silver, 1983), its utility for studying urban and secondary schools (Carver and Sergiovanni, 1969), and its use as a contemporary climate instrument (Hayes, 1973; Hoy, Tarter, and Kottkamp, 1991). Notwithstanding those criticisms, the framework, if not the instrument, appears to be a useful conceptual basis for examining aspects of school climate. That is, openness and authenticity in organizational interactions are important ingredients of productive relationships.

Health of School Climate

Organizational health is another perspective for examining school climate. The idea of positive and healthy relations in an organization is not new and calls attention to conditions that foster growth and development as well as to conditions that impede productive interpersonal relationships. Miles (1969, p. 378) defines a healthy organization as one that “not only survives in its environment, but continues to cope adequately over the long haul, and continuously develops and expands its coping abilities.” Implicit in this definition is the idea that healthy organizations successfully manage disruptive outside forces while effectively directing their energies toward the mission and objectives of the organization. Operations on a given day may be effective or ineffective, but the long-term prognosis is favorable in a healthy organization.

All social systems, if they are to grow and prosper, must face the four basic problems of adaptation, goal attainment, integration, and latency (Parsons, Bales, and Shils, 1953; Parsons, 1967; Scott, 1992). In other words, an organization must solve the problem of acquiring sufficient resources and accommodating to the environment, the problem of setting and attaining goals, the problem of maintaining solidarity within the system, and the problem of creating and preserving the values of the system. Thus, the organization must be concerned with the instrumental needs of adaptation and goal attainment as well as the expressive needs of integration and latency; in fact, we postulate that healthy organizations efficiently meet both sets of needs. Parsons (1967) also suggests that formal organizations exhibit three distinct levels of responsibility and control over these needs—the technical, managerial, and institutional levels.

The technical level produces the product. In schools, the technical
function is the teaching-learning process, and classroom teachers are directly responsible. The entire technical subsystem revolves around the problems associated with effective teaching and learning because educated students are the products of effective schools.

The managerial level mediates and controls the internal activities of the organization. The managerial function is a process that is qualitatively different from the technical function. Principals are the chief managers of schools. They must find ways to motivate teachers, cultivate commitment, and coordinate work. The administration controls and services the technical subsystem in two important ways: first, it mediates between the teachers and those receiving the services (students and parents); and second, it procures the necessary resources for effective teaching.

The institutional level connects the organization with its environment. Schools need legitimacy and backing in the community. Administrators and teachers need support to perform their respective functions in a harmonious fashion without undue pressure and interference from individuals and groups outside the school.

This Parsonian perspective provides an integrative scheme for conceptualizing and measuring the organizational health of a school (Hoy, Tarter, and Kottkamp, 1991). Although there are qualitative breaks in the line and authority relations at each of the two places where the levels are linked, interdependency and pressures for effectiveness make cooperation among levels necessary. Some may argue that in practice the breaks are not as clear as they are in theory; nevertheless, a healthy organization is one in which the technical, managerial, and institutional levels are in harmony, and the organization is meeting both its instrumental and expressive needs as it successfully copes with disruptive outside forces and directs its energies toward its mission.

A healthy school climate is characterized by positive student, teacher, and administrator interrelationships. Teachers like their colleagues, their school, their job, and their students and are driven by a quest for academic excellence. They believe in themselves and their students, and set high, but achievable goals. The learning environment is serious and orderly. Students work hard and respect others who do well academically. Principal behavior is also positive; that is, it is friendly, open, and supportive. Principals have high expectations for teachers and go out of their way to insure that teachers have the resources they need to do a good job. Healthy schools have principals who have influence with their superiors and can “go to bat” for their teachers. Finally, healthy schools have institutional integrity; that is, teachers are protected from unreasonable and hostile outside forces.
An unhealthy school climate is marked by conflict and turmoil. No one enjoys being there. Teachers do not like their students, colleagues, or superiors. Principals view teachers with suspicion and as those in need of close supervision and control, a perspective not unlike the teachers’ view of students. Students are seen by teachers as unruly, not serious, and in need of control. Learning and academic achievement are not seen as high priorities for students; in fact, most students do not try very hard and those that do are not respected by others. Not surprisingly, parents and others in the community try to intervene and demand change. An unhealthy school is a place were participants are forced to be rather than want to be. In brief, the school is a dismal place.

Positive interpersonal relationships are important aspects of healthy organizations. Moreover, harmony and cooperation are key ingredients of productive relationships; in fact, other things being equal, the greater the harmony in a system, the more effective the system will be (Etzioni, 1975; Nadler and Tushman, 1989).

A PARSIMONIOUS VIEW OF SCHOOL CLIMATE

Both of the preceding climate perspectives have been useful in analyzing the working environment of schools (Hoy and Sabo, 1998; Hoy, Tarter, and Kottkamp, 1991; Tarter, Bliss, and Hoy, 1990). Both frameworks attempt to tap similar and related aspects of the school workplace. Both use intriguing metaphors to examine school climate. Moreover, open schools tend to be healthy ones and healthy schools tend to be open. Although the openness and health are different, nevertheless there is some overlap in the frameworks and their measures. Hence, we turn to a more parsimonious perspective of the school workplace.

Using all the dimensions of the two climate measures, Hoy and Sabo (1998) performed a second-order principal components analysis to simplify the frameworks. All twelve aspects of openness and health were reduced to four major factors which explained 71 percent of the variance.

The first factor described the relationships between the principal and teachers and was defined by four variables. Supportive and collegial leadership load strongly and positively; directive and restrictive principal behavior load strongly and negatively. Hence, we called the factor collegial leadership—behavior of the principal that was supportive and egalitarian while being neither directive nor restrictive.

The second factor described the relationships teachers had with each other. Again, four variables load strongly on this factor: teacher commitment, teacher collegiality, and teacher affiliation load in a positive direc-
tion, and teacher disengagement loads negatively. Hence, we labeled this factor *teacher professionalism*—teacher behavior characterized by commitment to students, respect for the competence of colleagues, warmth and friendliness, and engagement in the teaching task.

The third factor was defined by strong positive loadings of academic emphasis, resource support, and principal influence, which we labeled *academic press*—a combination of teachers setting high, but reasonable goals, students responding positively to the challenge of these goals, and the principal supplying the resources and exerting influence to attain these goals.

Finally, the fourth factor was defined by one variable, institutional integrity. However, we changed the name and the direction of this scale. The change in name was made because first, results of earlier research suggested the construct might be mislabeled (Hoy, Tarter, and Kottkamp, 1991; Hoy and Hannum, 1997) and second, we wanted to use the notion of press from the outside (environmental) as well as the press from within (academic). Thus, the fourth factor was called *environmental press*—strong pressure from the parents and community to change school policy and influence the functioning of the school.

These dimensions of climate capture the essence of health and openness in a parsimonious manner. Openness of teacher principal relations is embedded in collegial leadership, and openness of teacher interactions is encapsulated in teacher professionalism. Using the Parsonian framework for viewing school health, all three levels of school organization are examined—the institutional (environmental press), the managerial (collegial leadership), and the technical (teacher professionalism and academic press). Moreover, the perspective calls attention to four important linkages in the school: community-school (environmental press), principal-teacher (collegial leadership), teacher-teacher (teacher professionalism), and teacher-student (academic press). Thus four, instead of twelve factors, or subtests, can be used to define the critical aspects of school climate; see Hoy and Sabo (1998) for more details of the factors. We will demonstrate that these four factors explain a significant amount of variance in student achievement; in fact, once the four factors are considered, other factors are redundant and add nothing to the explanation of variance in student achievement.

**SCHOOL CLIMATE AND STUDENT ACHIEVEMENT**

Some empirical evidence links school climate and student achievement (Armor et al., 1976; Brookover et al., 1978; Bossert, 1988). In many studies, after a small number of "effective" and "ineffective"
schools are identified, researchers then catalog organizational characteristics attempting to find consistent differences between the two types of schools. Not surprisingly, the differences vary from study to study when such post hoc methods are used, and the list of effective school attributes grows as more such studies are done. In addition, organizational characteristics are defined differently in each study so that reviewers use general terms to summarize the characteristics of effective schools—such terms as school climate and strong leadership, which are often defined quite differently in various studies. School climate, as the term is commonly used, is a global construct that researchers often use loosely to group together studies of school environment, learning environment, learning climate, sense of community, leadership, academic climate, and social climate. Therein lies its strength and its weakness; it is a useful integrating concept on the one hand, but on the other, climate often suffers from a lack of clear definition. Merton (1967, p. 39) notes that many words in the social sciences are bandied about and as a consequence become meaningless. Climate is on the verge of becoming such a term. Because its referents are so diverse, the word often obscures rather than creates understanding. School climate needs to be specified if we are to understand how it is related to student achievement. What specific aspects of school climate and leadership are related to student achievement?

Another issue is important in our analysis. Does school climate improve student achievement or does high student achievement produce a better school climate? We posit an interdependent and reciprocal relationship (Homans, 1950). School climate affects student achievement, but the reverse is also true: student achievement affects school climate. The two are mutually dependent. Of course, ex post facto research cannot demonstrate causality, and we make no such claim. Yet, theoretically, it seems reasonable to assume a reciprocal relationship between climate and achievement (Likert, 1961, 1967).

We do not equate high student achievement with school effectiveness. Although achievement is one aspect of school effectiveness, it is not the whole of it. School effectiveness is much more complex and includes many other outcomes such as social-emotional growth of students, satisfaction of teachers, efficient use of resources, innovativeness, adaptability, and goal accomplishment (Cameron and Whetten, 1983, 1995; Hoy and Miskel, 1991, 1996). Similarly, student achievement is more than mastery of basic skills. Higher order thinking and problem-solving skills are also important student outcomes, but they are not considered in this study because of the lack of consistent measures among school districts. For similar reasons, we confined our study
to schools at the middle level. Data using the same measures of achievement were available for all middle schools and were collected by the state in the eighth grade, at the conclusion of the middle school experience.

Rationale and Hypotheses

Firestone and Wilson (1985) found that principal support was positively related to student learning outcomes, while principal control was negatively associated with these outcomes. Similarly, Rosenholtz (1985) concluded from her review of the effective school literature that the principal’s supportive actions were a key to effective learning. In brief, principals can influence teaching either by administrative support or administrative control, and support seems more effective than control (Corwin and Borman, 1988). Hence, we expected that collegial leadership by the principal would contribute to an environment of high student achievement.

When teachers are supported by their superiors as well as their colleagues, they are likely to experiment and take risks to improve the quality of instruction (Hoffman et al., 1994). Support and commitment go hand in hand. Indeed commitment of teachers to the school and the welfare of students has been shown to be a critical aspect of effective schools (Rosenholtz, 1989). Teachers committed to students are likely to spend the extra time and effort needed to motivate and nurture them; for example, they stay after school to tutor students, counsel students who have special problems, and usually “go the extra mile” with students. There is widespread agreement that teacher collegiality is an important ingredient of improving teacher practice and getting better results (Barth, 1990; Rosenholtz, 1989; Sergiovanni, 1992). Collegial teachers help and support each other, are open to change, and are eager to learn (Johnson, 1990). Collegial teachers trust each other, and it is trust that enables them to try new ideas and take risks. It should not be surprising that a culture of trust is often a key to school effectiveness (Tarter, Sabo, and Hoy, 1995). Moreover, norms of collegiality promote teacher cooperation and collaboration (Little, 1987), attributes that enhance the learning environment and student achievement. Cohesiveness and support, not friction and faultfinding, are teacher characteristics associated with student learning (Anderson and Walberg, 1974). Moos (1979) summarized his own research on educational environments by concluding that gains on traditional achievement tests are most likely to occur when there is a combination of warm and supportive relationships, an emphasis on academics, and a well-structured
educational environment. Thus, we expect teacher professionalism to be positively related to student achievement.

In previous studies of high schools, the single best climate predictor of student achievement was academic emphasis. High schools with an orderly and serious learning environment, with teachers who set high but achievable goals, and with students who work hard and respect others who do well academically, have higher levels of student achievement, even when data are controlled for socioeconomic status (Hoy, Tarter, and Kottkamp, 1991). A number of other studies also suggest strong links between academic emphasis and student achievement (Bryk, Lee, and Holland, 1993; Murphy et al., 1982; Shouse and Brinson, 1995). Similarly, we expected academic press to be positively related to student achievement in middle schools.

One aspect of climate that has been related to student achievement in a surprising way is institutional integrity; it is negatively associated with student achievement. In other words, when teachers perceive “interference” in the school from the community, students achieve at higher levels (Hoy, Tarter, and Kottkamp, 1991). Clearly teachers do not like such interference, but negative consequences in achievement are not the case; in fact, just the opposite seems true. Some press from the community seems functional for increased achievement on basic skills, and hence, in this study of middle schools, we anticipated that environmental press would enhance higher levels of student achievement in mathematics, reading, and writing rather than inhibit it.

In summary, collegial leadership, teacher professionalism, academic press, and environmental press should produce a school workplace conducive to high levels of achievement in mathematics, writing and reading. Although measures of organizational climate provide a snapshot of the school workplace, climate is a general concept that captures an enduring quality of organizational life (Taguiri, 1968; Hoy and Miskel, 1996); consequently, one would expect aspects of school climate at a given point to predict achievement over several years. Hence, we hypothesize that the consequences of organizational climate on achievement would persist over several years.

METHOD

SAMPLE

The unit of analysis for climate studies should be the school because the variables reflect organizational properties (Sirotnik, 1980; Hoy,
Tarter, and Kottkamp, 1991). A sample of eighty-six middle schools, which included responses from 2,741 teachers, was used to test the hypothesized relationships of this study. It was not possible to select a random sample of New Jersey middle schools because not all superintendents were willing to participate in such a project, a problem that plagues all research of this kind. Nonetheless, care was taken to select urban, suburban, and rural schools from diverse geographic areas of the state as well as from all socioeconomic levels in the state. Only schools that called themselves middle schools and had a 5–8, 6–8, or 7–8 configuration were included in the sample. Using the state’s measure of socioeconomic status, 28 percent of the schools came from the lowest levels, 37 percent came from the middle levels, and 35 percent came from the highest levels. Fifteen of the twenty-one counties in New Jersey were represented in the sample.

MEASURES

To measure the organizational climate of schools, two instruments were used. The Organizational Climate Description Questionnaire (OCDQ-RM) measures aspects of the openness of middle school climate, and the Organizational Health Inventory (OHI-RM) taps dimensions of the health of middle school climate.

The OCDQ-RM is a fifty-item Likert descriptive questionnaire that measures six dimensions of the openness of the climate. Three subtests describe the openness of principal-teacher interactions—Supportive, Directive, and Restrictive behaviors, while three scales, Collegial, Committed, and Disengaged, measure the openness of teacher-teacher interactions. The reliability coefficients for all six subtests are high; alpha coefficients of reliability for the current sample were as follows: Supportive (.96), Directive (.88), Restrictive (.89), Collegial (.90), Committed (.93), and Disengaged (.87). The stability of the factor structure provides construct-related evidence for the six dimensions of climate. In the current study, six hypothetical dimensions of school climate were postulated and empirically demonstrated. The items measuring each climate dimension were systematically related to each other as expected in the factor analysis of the OCDQ-RM. The strong loadings in the predicted six factor solution and the high reliabilities of the subtests suggest that the OCDQ-RM is a valid and reliable measure of school climate. The details of the factor analytic study of the instrument are found elsewhere (Hoy et al., 1996). Constitutive definitions and sample items for each dimension of climate are provided in Table 1.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
<th>Sample Items</th>
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</table>
| Supportive Principal Behavior | Behavior directed toward both the social needs and task achievement of faculty. The principal is helpful, genuinely concerned, and attempts to motivate by using constructive criticism and by setting an example of hard work. | - The principal goes out of his/her way to help teachers.  
- The principal uses constructive criticism.  
- The principal sets an example by working hard himself/herself. |
| Directive Principal Behavior | Refers to principal behavior that is rigid and domineering. The principal maintains close and constant monitoring over virtually all aspects of teacher behavior in the school. | - The principal rules with an iron fist.  
- The principal supervises teachers closely.  
- The principal monitors everything teachers do. |
| Restrictive Principal Behavior | The principal hinders rather than facilitates teacher work by burdening them with busy work, excessive committee work and the like. | - Teachers are burdened with busy work.  
- Routine duties interfere with the job of teacher.  
- Assigned non-teaching duties are excessive. |
| Collegial Teacher Behavior | Open and supportive professional interactions among teachers. Teachers like each other, respect the expertise of their colleagues, and help each other. | - Teachers help and support each other.  
- Teachers respect the professional competence of colleagues.  
- Teachers provide strong social support for colleagues. |
| Committed Teacher Behavior | Teachers work hard at helping students develop both socially and intellectually. Teachers want students to achieve and are committed to students. | - Teachers "go the extra mile" with their students.  
- Teachers help students on their own time.  
- Teachers are committed to helping their students. |
| Disengaged Teacher Behavior | Teachers simply are putting in their time. They are critical and unaccepting of their colleagues. There is little focus or meaning in their professional activities. | - Teachers ramble when they talk at faculty meetings.  
- Teachers mock teachers who are different  
- Teachers don't listen to other teachers. |
The OHI-RM is a forty-five-item Likert descriptive questionnaire that measures six dimensions of the health of middle schools. The Academic Emphasis and Teacher Affiliation scales depict teacher-student and teacher-teacher relationships; the Principal Influence, Collegial Leadership, and Resource Support subtests describe the leadership of the principal; and the Institutional Integrity scale measures the degree to which teachers perceived they are protected from hostile forces in the community. The reliability coefficients for all six subtests are high in the current sample; alpha coefficients of reliability were as follows: Academic Emphasis (.94), Teacher Affiliation (.94), Principal Influence (.92), Collegial Leadership (.94), Resource Support (.96), and Institutional Integrity (.93). Moreover, in a factor analytic study of the OCDQ-RM for the current sample (Hoy et al., 1995; Hoy and Sabo, 1998), the items measuring each climate dimension were systematically related to each other as predicted; thus, the reliability and validity of the instrument were supported. Constitutive definitions and sample items for each dimension of climate are provided in Table 2.

Rather than use all twelve aspects of climate, we took advantage of the parsimonious perspective of climate described earlier and combined the elements of climate into four general, basic dimensions: collegial leadership, teacher professionalism, academic press, and environmental press (see Hoy and Sabo, 1998, for the details).

Student achievement was measured using the state of New Jersey's Eighth Grade Early Warning Test (EWT), which is given to all eighth grade students in the state. The test measures achievement in reading, mathematics, and writing using both multiple-choice and constructed-response items. The reading section of the examination had a reliability of .84, the mathematics section a reliability of .89, and the writing task a reliability of .92. The hypotheses of the study were tested separately for each of the three achievement variables. All achievement data were obtained by the researchers directly from the New Jersey State Department of Education.

The socioeconomic status (SES) of a school was measured by use of the state district factor groups (DFG). DFG is a composite index of SES based on the following variables: educational level of adults in the district, the occupations of adults in the district, the percentage of people who have lived in the district for the past ten years, the number of people per housing unit, the percentage of urban population in the district, average family income, and rate of unemployment and poverty. Districts are arrayed along a continuum of 0 to 9; the higher the number, the greater the SES. Thus, the DFG computed by the state of New Jersey is our measure of SES.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Sample Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Integrity</td>
<td>The degree to which a school can cope with its environment in a way that maintains the educational integrity of its programs. Teachers are protected from unreasonable community demands.</td>
<td>- The school is open to the whim of the public.<em>&lt;br&gt;- Select citizen groups are influential with the board.</em>&lt;br&gt;- Teachers are protected from unreasonable community and parental demands.</td>
</tr>
<tr>
<td>Collegial Leadership</td>
<td>Refers to principal behavior that is friendly, supportive, open, and guided by norms of equality. The principal sets the tone for high performance.</td>
<td>- The principal is friendly and approachable.&lt;br&gt;- The principal is willing to make changes.&lt;br&gt;- The principal lets faculty know what is expected of them.</td>
</tr>
<tr>
<td>Principal Influence</td>
<td>Refers to the principal's ability to affect the action of superiors. The principal is persuasive with and works effectively with superiors.</td>
<td>- The principal gets what he or she asks for from superiors.&lt;br&gt;- The principal is able to work well with the superintendent.<em>&lt;br&gt;- The principal is rebutted by the superintendent.</em></td>
</tr>
<tr>
<td>Resource Support</td>
<td>Refers to provisions at a school where adequate classroom supplies and instructional materials are available, and extra materials are easily obtained.</td>
<td>- Teachers receive necessary classroom supplies.&lt;br&gt;- Extra materials are available if requested.&lt;br&gt;- The school gets its fair share of resources from the district.</td>
</tr>
<tr>
<td>Academic Emphasis</td>
<td>The extent to which the school is driven by a quest for excellence. High but achievable goals are set for students; the learning environment is orderly and serious, and students work hard and respect those who do well academically.</td>
<td>- The learning environment is orderly and serious.&lt;br&gt;- Students respect others who get good grades.&lt;br&gt;- Students try hard to improve on previous work.</td>
</tr>
<tr>
<td>Teacher Affiliation</td>
<td>Refers to a general friendliness in the school and a strong affiliation with the school. Teachers feel good about each other, their job, and their students.</td>
<td>- Teachers exhibit friendliness to each other.&lt;br&gt;- Teachers accomplish their jobs with enthusiasm.&lt;br&gt;- Teachers do favors for each other.&lt;br&gt;- Teachers are indifferent to each other.*</td>
</tr>
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*These are reversed.
DATA COLLECTION

Climate data were collected from all teachers at regularly scheduled faculty meetings. The purpose of the study was explained in general terms, anonymity was guaranteed, and the importance of candid responses was emphasized. Teachers at the meeting were divided into random groups with one group responding to the OHI-RM and another to OCDQ-RM; that is, the questionnaires were randomly distributed to the groups during data collection. This procedure was used because the unit of analysis was the school (data were aggregated at the school level), because it ensured methodological separation of the two sets of climate variables, and because it was an efficient method to collect a large amount of data without overburdening the teachers. Virtually everyone responded to the questionnaires.

School achievement scores were supplied by the New Jersey State Department of Education during the same year the climate data were collected (Time 1) and then again two years later (Time 2).

RESULTS

To examine the hypotheses that collegial leadership, teacher professionalism, academic press, and student achievement would facilitate student achievement and would persist over time, we compared correlational and multiple regression results found initially by Hoy and Sabo (1998) with those that were done two years later with new achievement data.

One of the problems with nonexperimental research is that it is often difficult to determine the effect of one variable independent of others. This is a special problem for studies that seek to explain the variance of school achievement. Frequently, what seems to be a strong predictor of achievement is merely a proxy for socioeconomic level (SES). Wealthier school districts have higher achievement levels than poorer ones. We attempted to deal with this problem in several ways. First, in addition to the zero-order correlations, standardized betas and multiple regression coefficients were used to determine the independent and combined contributions of the climate variables. Second, all multiple regressions are performed using a set of independent variables that included SES as well as climate variables. Hence, the independent influences of SES and each climate variable can be determined, controlling for other variables in the regression. Thus, each of the dependent variables was regressed on a set of five variables, which included SES (DFG).

As expected, the zero-order correlations were all significantly related
Table 3. Correlational and multiple regression analysis of climate dimensions and SES with aspects of student achievement for Time 1 and Time 2.

<table>
<thead>
<tr>
<th>Measures of Organizational Climate</th>
<th>Panel A</th>
<th>Panel B</th>
<th>Zero-Order Correlations</th>
<th>Zero-Order Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Math</td>
<td>Read</td>
<td>Write</td>
<td>Math</td>
</tr>
<tr>
<td>Environmental Press</td>
<td>.36**</td>
<td>.36**</td>
<td>.35**</td>
<td>.30**</td>
</tr>
<tr>
<td>Collegial Leadership</td>
<td>.48**</td>
<td>.49**</td>
<td>.48**</td>
<td>.13</td>
</tr>
<tr>
<td>Teacher Professionalism</td>
<td>.49**</td>
<td>.47**</td>
<td>.49**</td>
<td>.13</td>
</tr>
<tr>
<td>Academic Press</td>
<td>.60**</td>
<td>.57**</td>
<td>.57**</td>
<td>.27**</td>
</tr>
<tr>
<td>SES</td>
<td>.77**</td>
<td>.75**</td>
<td>.73**</td>
<td>.44**</td>
</tr>
</tbody>
</table>

Multiple correlation
Adjusted $R^2$ .85** .84** .83** .71 .68 .66

<table>
<thead>
<tr>
<th>Measures of Organizational Climate</th>
<th>Panel A</th>
<th>Panel B</th>
<th>Measures of Student Achievement Standard Beta Weights</th>
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<tbody>
<tr>
<td></td>
<td>Math</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>Environmental Press</td>
<td>.37**</td>
<td>.37**</td>
<td>.27**</td>
</tr>
<tr>
<td>Collegial Leadership</td>
<td>.47**</td>
<td>.49**</td>
<td>.48**</td>
</tr>
<tr>
<td>Teacher Professionalism</td>
<td>.45**</td>
<td>.46**</td>
<td>.47**</td>
</tr>
<tr>
<td>Academic Press</td>
<td>.58**</td>
<td>.56**</td>
<td>.58**</td>
</tr>
<tr>
<td>SES</td>
<td>.75**</td>
<td>.71**</td>
<td>.65**</td>
</tr>
</tbody>
</table>

Multiple correlation
Adjusted $R^2$ .85** .83** .77** .71 .66 .57

*$p < .05$

**$p < .01$

‡$p < .06$
to all measures of student achievement as predicted (see Table 3). The multiple regression analyses, however, clarified the results even further. For mathematics achievement, a multiple $R$ of .85 ($p < .01$) explained 71 percent of the variance. Environmental Press ($\beta = .30$, $p < .01$), Academic Press ($\beta = .27$, $p < .01$), and SES ($\beta = .44$, $p < .01$) had significant and independent effects on mathematics achievement. For reading achievement, 68 percent of the variance ($R = .84$, $p < .01$) was explained. Environmental Press ($\beta = .30$, $p = .01$), Academic Press ($\beta = .22$, $p < .01$), Collegial Leadership ($\beta = .19$, $p < .05$), and SES ($\beta = .43$, $p < .01$) had significant and independent effects on reading achievement. In writing, 66 percent of the variance for achievement was explained by the regression equation ($R = .83$, $p < .01$), and Environmental Press ($\beta = .30$, $p < .05$), Teacher Professionalism ($\beta = .16$, $p < .05$), Academic Press ($\beta = .24$, $p < .01$), and SES ($\beta = .40$, $p < .01$) each had a significant independent influence on writing achievement. All the regression analyses are summarized in Panel B of Table 3.

For each of the measures of achievement, about two-thirds of the variance is explained by the independent variables. All the climate variables make a significant independent contribution to one or more of the achievement measures. Although socioeconomic status is the single best predictor of achievement, Environmental Press and Academic Press are not far behind. Collegial Leadership and Teacher Professionalism work together to contribute to achievement; in fact, if either is omitted from the regression equation, the other makes a significant and independent contribution to the explanation of variance.

Two years later, the relationship between climate and achievement was very similar. A comparison of the results shows that the zero-order and multiple correlations are either the same or vary by a few one hundredths. The biggest difference is in writing, where the multiple $R$ changes from .83 the first year to .77 two years later. The patterns of the relationships, however, are quite similar (see Table 3).

**DISCUSSION**

Organizational climate of middle schools is important for student achievement, especially in the basic skills of reading, writing, and arithmetic. High performance middle schools are places where teachers like and respect their colleagues and are committed to their work and students (high Teacher Professionalism). Teachers see the principal as their ally in the improvement of instruction; the principal is friendly,
open, respectful, supportive, and yet establishes and is committed to high standards of teacher performance. There is no need to coerce or restrict teacher behavior; cooperation is freely given by teacher professionals who are committed to teaching and learning (strong Collegial Leadership). High achieving schools have a strong internal press for academic excellence (strong Academic Press). Teachers and administrators set a tone that is serious, orderly, and focused on academics. Students respond by accepting the challenge, believing in themselves, and respecting the academic accomplishments of their peers. In the press for achievement, everyone does his or her part. Principals use their influence with superiors to get the necessary resources and support for the instructional program; teachers set reasonable academic goals for their students and go the extra mile in helping them achieve; and students accept the importance of academics and work hard to be successful (high Academic Press).

If there is a surprise in the profile of high achieving schools, it may be the press that is generated from the outside (Environmental Press). Although teachers desire buffering from the outside, the data continue to show that over-protection is not functional and may in fact be dysfunctional for high student achievement (Hoy, Tarter, and Kottkamp, 1991; Hoy and Sabo, 1998). Pressure from the parents and community seems to encourage rather than hinder student achievement. Teachers may sometimes view parents as meddling and interfering, but the consequence of such environmental press seems positive. This finding is consistent with the Eand studies (Armor et al., 1976) that show that simply having parents present in the school helps. Our data support that finding. Pressure from outside the schools, even if it is seen as obtrusive by teachers, seems to have positive consequences for student performance.

As predicted, the impact of a school’s climate is relatively enduring. The influence of climate on achievement continues over time. The climate patterns that predict high student achievement in the first year also predict school achievement levels two years later. This finding suggests that the consequences of positive interpersonal relationships for students continue over several years; the relationship between climate and achievement seems robust.

The socioeconomic status of the community is always a strong predictor of student achievement; in fact, it typically overwhelms other variables. This study demonstrates that climate variables are important in explaining achievement independent of SES. In addition to SES, the organizational climate variables of Environmental Press, Collegial Leadership, Teacher Professionalism, and Academic Press are
also important, and they are clearly more amenable to intervention and change than SES. Together, these aspects of climate promote a school atmosphere that encourages achievement and effectiveness.

Although we reduced the twelve dimensions of the two climate perspectives to four critical ones, the general notions of openness and health were retained. Openness is the general construct that undergirds collegial leadership and teacher professionalism. Health is critical to the connections in the organization—between the school and community, between the principal and teachers, and between teachers and students. This is not surprising because the construct of organizational health was built upon the Parsonian distinction of levels of organizations—technical, managerial, and institutional. Parsons himself makes the point that there exist “qualitative breaks” in the line-authority relations at each of the points where the three systems are linked (Parsons, 1967). In service organizations like schools, another crucial linkage exists between the professionals and clients. Healthy schools are those in which all the linkages are productive. The data of this study suggest that productive does not necessarily mean completely harmonious but rather denotes a press or dynamic tension that focuses and directs activities. If the internal and external press are directed toward achievement, then effort is enhanced, especially if it is coupled with openness and cooperation within the system.

A limitation should be noted. The present research was concerned with organizational climate and student achievement. Achievement is only one facet of effective schools, albeit a highly visible one. Quality schools are also concerned with the social-emotional development of students. Well-adjusted students who are happy, believe in themselves, like school, value education, and respect others are significant school outcomes. The middle school is a crucial link between the self-contained classes of elementary schools and the departmentalization and specialization of most high schools. Student exploration of interests and the healthy social and personal development of adolescents are important features of the middle school. Consequently, as researchers and principals turn to what makes a good middle school, they must be concerned with such expressive outcomes as self-esteem, creativity, and citizenship, as well as student achievement in basic skills and higher-level cognitive activities.

For the researcher, another important issue is studying and refining the concept of Environmental Press. Some of what seems disruptive to teachers at times has positive consequences for students. We need to sort out destructive and constructive outside forces. Community involvement in schools does have a contribution to make in improving in-
structional delivery systems. But not all involvement is helpful; some is counterproductive. Environmental Press does not differentiate positive forces from negative ones. Moreover, simply because teachers do not like pressure and interference from the outside does not mean that such efforts are harmful. Outside interventions can promote achievement without destroying other healthy internal relationships. When and how can such forces be effective? One interesting hypothesis is that when a school has healthy interpersonal relationships among students, teachers, and administrators, then challenges from the outside can be made constructive; however, when internal interpersonal relations are poor, the same challenges may be destructive. Are healthy and open school climates prerequisites for school improvement? These are the kinds of issues that researchers must address if we are to progress in our understanding and improvement of student learning.

For school administrators the challenge is similar. As we have seen, healthy and open organizational dynamics are generally important in fostering student achievement. The leadership of the principal may be important, but it is not sufficient in promoting student achievement. After all, the principal is one step removed from teaching. Collegial leadership that is friendly, supportive, egalitarian, and open is important in providing a sound organizational environment, but it is not enough. Ultimately, only teachers improve instruction; they have to decide they want to improve before it will happen (Hoy and Forsyth, 1986). It is not surprising that Collegial Leadership and Teacher Professionalism work together in affecting student achievement. Principals need to find ways to link their leadership efforts with the desires, needs, and efforts of teachers, just as teachers must link their efforts with needs and interests of students. Principals also face the task of regulating outside forces in a way that produces a dynamic tension for internal operations. They must differentiate between destructive outside forces and constructive external press, and buffer the former, but embrace the latter.

SUMMARY AND CONCLUSION

The notions of health and openness are general attributes of organizational climate that can be applied to all organizations. The Parsonsian framework has been criticized because of the difficulty in translating Parsons' analytic concepts into operational variables (Morse, 1961; Scott, 1981, 1992), yet it has been useful in efforts, both in developing the construct of organizational health and in operationalizing
the variables. Likewise, the work of Halpin and Croft (1963) provides a good beginning for conceptualizing and measuring the openness of interpersonal interactions in organizations. The framework on climate proposed in this study is a parsimonious one that captures and synthesizes both climate perspectives.

Academic achievement in mathematics, reading, and writing tends to be related to healthy and open interpersonal dynamics of schools, and the consequences of climate on achievement seem relatively enduring. Although the socioeconomic status of the community is important in predicting student achievement, so too are aspects of the organizational climate. Environmental Press, Collegial Leadership, Teacher Professionalism, and Academic Press make independent and significant contributions to various aspects of student achievement in basic skills in addition to the wealth of the district. This finding is especially important because it is easier to improve organizational climate than it is to change the socioeconomic character of a community.

ENDNOTE

1. For a more extended discussion of organizational climate, see Hoy and Miskel (1996) and Hoy and Sabo (1998). Our analysis of climate closely mirrors that work.

REFERENCES


Halpin, A. and D. Croft. 1963. *The Organizational Climate of Schools*. Chicago: Midwest Administration Center of the University of Chicago.


