

EFFECTIVE SENIOR SECONDARY SCHOOL CLIMATE

-DEFINITION AND MEASUREMENT

by

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ABSTRACT

A synthesis of effective schools research shows conducive climate to be associated with academic achievement but the research is dominated by elementary school studies. Those studies which included secondary school students implied that a good climate remained crucial to effective learning at the secondary level and yet they were very ambiguous about which elements comprised an effective climate for secondary schools.

The hypotheses examined by this study were:

- a) that there exists a climate or "ethos" at the secondary level, perceptible to students;
- b) that climate has identifiable factors which are significantly associated with higher student achievement;
- c) that climate factors can be identified using a student survey questionnaire and
- d) that the questionnaire could, after statistical analysis, yield change prescriptions which, if implemented, might improve the climate and possibly also achievement.

A detailed literature review was undertaken to extract potential critical elements of climate from previous research. A questionnaire with 16 potential climate elements was developed and pilot tested using 384 senior secondary students in an urban centre. Sixteen factors which resulted from a factor analysis of the questionnaires were cross-tabulated against both marks and the students' overall rating of the school. The reliability levels of the individual

questionnaire items were used to eliminate all but four of the factors. These factors were tested in a correlational matrix with marks and the overall rating of the school to determine if the factors were associated with marks and their school climate.

The respondents were able to reliably identify at least four factors of their school climate. Secondly, contrary to the literature findings, there was no association between the student-reported marks and the school's overall climate rating. The lack of association of marks with many of the factors brought into question the reliability of using student-reported marks as an achievement variable.

Thirdly, the results seem to indicate that students have dichotomous perceptions of their school depending on whether they are evaluating it as a mark-giver or as an institution in which they live.

Change prescriptions were impossible to devise since the delineation of critical factors was incomplete and the achievement variable was questionable.

In conclusion, the study has helped define critical secondary school climate, and laid the groundwork for further research into student perceptions in general and the relationship between achievement and climate in particular.

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Chapter 1

A. Effectiveness

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1. Dependence Reduced.

In the 1960's, educators came under severe criticism for being apparently unable to do what they were essentially trained and paid to do--improve student achievement levels. It was easily demonstrated that student achievement was affected by various input variables such as the family's socio-economic level, mother's education, number of siblings and volumes of books in the home. Conversely, Coleman's 1966 study (Equality of Educational Opportunity) demonstrated that many school factors such as facilities, curriculum, staff and processes were less important. Walberg and Marjoribanks (1976) further undermined school efficacy by showing that input variables including pre-test achievement and factors within the home accounted for 75% of all post-test variance in student achievement levels. These, and other studies, were responsible for bringing to public knowledge the fact that schools are not the major determiner of a student's achievement. The studies served to imply that schools were an insignificant influence on student achievement. Poor, underprivileged, ethnic-minority children, and the schools they attended, achieved below national achievement norms almost without exception and it was easy to assume that within school processes were unimportant by comparison with home environment variables. Achievement levels could readily be rationalized as dependent on the home situation.

In the 1970's a number of researchers, using process-product analysis techniques, rejected the dependence notion and started to analyze a growing number of exceptions to the achievement norms. They found and investigated schools where, despite being populated by underprivileged, poorly prepared students, the achievement levels were above American national norms. These schools became labelled as overachieving or outliers and it was the process variables within the schools which came under close scrutiny. It was found that if "a critical mass" (Austin, 1979) of positive process variables could be lumped together, the process-product technique would be able to relate the abnormal achievement levels or effectiveness to those variables.

The major effect of the research into abnormally effective schools was to "reduce the dependence of student performance on family background," (Cohen, 1981) and to re-direct research efforts to determine which specific elements within the outlier schools were critical to the higher achievement levels.

2. Effectiveness Analyzed

An analysis of the Effective Schools Literature yields a list of five elements deemed to be crucial in and critical to school effectiveness—strong administrative leadership, high expectations, good school climate, clear, well known school objectives and effective monitoring (Shoemaker and Fraser, 1980).

A consensus of the findings shows effective schools to be those with strong administrative leaders. Some studies note specific traits, activities and competencies of effective leaders but these characteristics are not necessarily replicated in the

findings of other researchers. Through the confusion, one finding relative to leadership does emerge consistently--the leaders will be the right people for their school's unique situation. They will be able to analyze their school, develop plans, motivate staff and/or do whatever is necessary to produce improved achievement levels. To borrow from Austin's analysis of effective schools and apply his statement to administrators: "There is no single factor that accounts for a (principal) being classified as exceptional. These (administrators) appear to have a critical mass of positive factors which, when put together, make the difference." (Shoemaker and Fraser, 1980)

Effective monitoring also emerged as essential to improved learning. A variety of purposes for monitoring was expressed by different authors which included not only student feedback but also monitoring for program improvement (Brookover, 1981) material selection and coordination (Stoll, 1979 and Edmonds 1979) and teacher efficiency and staff selection. (Venezky, 1979)

A third critical element cited in the research is high expectations by staff that all students can achieve to a level approaching that of their ability. Cooper (1979) explains the dilemma of some students. They often feel their efforts are futile when the teacher has already communicated his/her misgivings about the student's ability to succeed. Washington (1980) extends the need for high expectations to encompass teacher performance as well. He declares principals to be the key in establishing a sense of individual confidence in staff members. Shoemaker and Fraser, (1980) underline the importance

of expectations in citing "a crucial connection between expectations and achievement." (p. 181)

Also essential in effective schools was the presence of clear, well-communicated, school objectives. A good school will have its plan well known and attended to by staff and students. Austin includes parents in the list of those needing to know the school's goals when he notes a study which "confirms the faith of those who believe that no improvement in the quality of schooling is likely unless the people in the individual schools, in concert with the parents and children they serve, agree on what they want to accomplish." (1979, p. 14)

"A climate conducive to learning" (Edmonds, 1979) was expressed as critical by every researcher and reviewer contributing to the Effective Schools Literature. Again, the precise terms varied from author to author but a consensus on the importance of climate is indisputable if the research findings are to be accepted. Since climate is the main topic of this project, and since it will be dealt with at length further on, it will not be dwelt upon at this point.

3. Literature Shortcomings

Indeed the literature has served to reduce the notion that achievement levels are dependent on home variables and to re-focus research as demonstrated by the dedication of an entire issue of Educational Leadership to Effective Schools. (December 1982) It has yielded specific elements that are essential to maximum achievement but it contains a number of faults or shortcomings which must be acknowledged before an appreciation of

the relevance of this project can be gained.

A close look at the findings reveals that the elements cited are stated differently from one study to another and that often, when reviewers support the findings of one study with others, they overlook the need for precision in the terminology. An example of this is the expression by every study and reviewer of the need for strong administrative leadership. There appears to be a consensus but some studies are expressing a need for curriculum involvement (Delaware in Venezky, 1979; Maryland, 1979; and Weber, 1971) while others are referring to the administrator's task orientation. (E.S.A.A. in Shoemaker and Fraser, 1980; Brookover and Lozette, 1979; and New York, 1974). Similar accusations of ambiguity can be levelled in each of the five factor areas.

A second problem, at least as far as this project is concerned, is the lack of research into effectiveness at the secondary school level. Only two of the twelve studies cited here included secondary schools (Rutter, 1979 and McDill, 1969) and there are serious questions regarding the validity of elementary findings at the secondary level. Firestone (1982) suggests that "the basic organizational structure at the secondary level may necessitate different approaches to improving effectiveness and even different definitions of effectiveness." (p. 51)

Thirdly, the effective schools research lacks widely used instruments for measuring the critical elements. In order for generalizations to be made and findings to be replicated, a

series of instruments must be developed, and used in a variety of settings.

Lastly, and largely because of the predominance of elementary school subjects, few attempts have been made to tap the perceptions and knowledge of those most closely associated with the school's improvement attempts--the students.

These and other problems not associated directly with the literature are dealt with in more detail later in this project. (Chapter 3, 4 and 5)

4. Climate Re-defined

As previously mentioned school climate is seen as an essential ingredient in every researcher's formula for improvement. Each of the individual studies and reviews cited a good school climate as essential--but in ambiguous and sometimes conflicting terms. Some of the studies cite the climate element as "a favorable climate" (Maryland, 1979), or as "an atmosphere conducive to learning" (California, in Sirotnik, 1981) or just as "a good atmosphere." (Weber, 1971). Some cite good climate with descriptions like "collaborative" (New York, 1974), "feeling of ability" (Brookover, 1979), "sense of confidence" (Maryland, 1979), "cooperative and productive atmosphere" (Rutter, 1979) or even "competitive". (McDill, 1969)

There appears to be no consensual definition in the studies and a range of focusses of the researchers when discussing climate. For this reason, it is necessary to establish a definition--narrow enough to delineate the elements deemed critical in the studies and yet broad enough to exclude

prescriptions for specific activities, techniques and personality traits.

Rutter's term "ethos" (1979) suggests the psychological nature of school climate while Carolyn Anderson (1982) provides boundaries and focus by including "the total environmental quality within a given school building" (p. 369). We must understand school climate to be the sum of the attitudes, expectations, atmosphere, and motivations within a school building. It is the result of the dynamic interaction of staff and students as well as the input of parents and community into a tangible spirit within the school building. Climate is the feeling a visitor gets as he first walks into the building and at the same time, the feeling of a staff member or student who has worked there for years.

It must be anticipated that attempts to alter the "ethos" (Rutter, 1979) or "environmental quality" (Anderson, C., 1982), because it is the sum of many elements, will probably require incremental alterations. Ineffective attitudes and expectations are difficult to change. Their alteration requires patience and persistence on the part of the program implementer and commitment and conviction on the part of the subject of change. The change program will be fraught with many obstacles and frequent set-backs. Some elements will be impossible to change while others will be easy. Climate change, in general, will be slow, incremental, and the result of a critical mass of several alterations of a variety of elements.

B. Purpose of the Study

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Since there is a lack of research on effectiveness at the secondary level, a number of the goals of this study will be of a pioneering nature--establishing groundwork from which more fine-tuned research can be launched. The long-range hope of this writer is that this project will be used to eventually refine a questionnaire capable of helping educators produce climate change prescriptions which, in turn, will lead to higher schoolwide achievement levels. This aim, though well beyond the scope of this project, is the focus from which the fundamental goals of this study were derived.

The first purpose of this project is to establish that there does exist a climate or "ethos" (Rutter, 1979) in senior secondary schools. Secondly, it will be shown that individual factors of the secondary school climate will be discernable from responses to a student survey questionnaire. Lastly, as in the studies of Effective Elementary Schools, an association between the climate and marks will show that good climate in secondary schools is critical to higher achievement.

The establishment of climate existence and the labelling of individual factors will be achieved by factor analyzing the questionnaire responses (Principal Components Method) and by using Chi-square cross tabulations of the questionnaire items against both marks and the student rating of the overall school climate (item C15). Factors resulting from these tests will be tested in a Pearson Correlational Matrix to establish their

association strength with marks (proposed as achievement) and the overall rating of the school (proposed as climate).

C. Importance of the Study

It is hoped by the author that this project will result in a clearer understanding of the term "climate" and a further understanding of the importance of school climate in influencing achievement at the secondary school level.

Once this importance is established and specific factors of critical climate are determined, it is further hoped that this project will show the feasibility of measuring those critical elements by the use of a student survey questionnaire. Such a tool could be useful in providing school administrators and senior officials with prescriptions for school climate improvement and thereby the improvement of student achievement.

It is recognized that this project cannot hope to act as more than a guide post directing further research into the fine-tuning of a useful school assessment tool. Its main purpose is to establish grounds for further research, to determine potential directions for that research and perhaps to contribute specific questions for the final instrument, which itself is likely to be only one of a variety of necessary tools for school improvement.

D. Shortcomings of This Project

A number of potential shortcomings and uncertainties come to mind even before the final draft of the pilot questionnaire is

completed. The relative scarcity of information relating climate to achievement at the secondary level serves to undermine confidence in the dimensions and elements deemed critical by the literature and by personal experience. It is very possible that there are critical elements of climate that were not included in the secondary school studies and that were overlooked in this author's searches into personal experience. It is likewise possible that one or more of the elements included as critical will not be perceived that way by the students surveyed and this may dictate a change of direction in future research. For example, it is possible that one of the dimensions of influence greatly outweighs the others. If (as a comparison of elementary and secondary elements suggests) internal or personal motivation becomes a more important factor in secondary achievement, perhaps a plan for improving that one dimension would be more fruitful and cost-effective. The research may imply that if we work on the personal motivation of secondary students, we will be more successful than if we attempt to alter the school environment or staff attitudes. If nothing else, a finding of this nature would give clearer direction for future research.

The subject school being surveyed is another potential source of problems--it may not be an "average" school. This would disallow this project and its resulting questionnaire from being used in the general high school populace. The subject school is situated in a moderately low socio-economic area of a major city and the students have shown moderately low aspirations for post-secondary education as signified by the number of

students actually continuing. On the other hand, the socio-economic standard is statistically not as alarmingly low as the subject schools of many of the Effective School studies, nor are there insignificant numbers of students who actually follow through on aspirations for higher education. One positive factor is the abnormal concern shown by the staff and administration of the subject school for the students. In short, it can be argued that the pilot school is not so far from the norm in this city as to be considered atypical.

The last source of concern regarding this project's credibility is the current atmosphere of turmoil within the B.C. educational system. Budget cutbacks may predispose the survey respondents to perceive a poor school climate no matter how favourable the elements in the subject school might be. It is possible that the respondents might see their school climate as poor not as a result of within-school processes and inputs but as a result of the influence of media coverage, parental dissatisfaction, and teacher anxiety. The potential significance of the project shortcomings cannot be estimated at this time but must be re-introduced and assessed as the results of the survey are analyzed.

In my view, none of the obstacles or shortcomings constitute a threat big enough to outweigh the previously stated potential significance of this study.

Chapter 2

The literature =====

A. Evolution of the Effective Schools Literature

The Effective Schools Literature is a body of knowledge being developed largely in reaction to a notion about public education that schools have little or no effect on the achievement levels that students will display. It was reasoned in the late 1960's that by far the greatest influence on and predictor of student achievement was the variables brought into schools by each student. Factors such as socio-economic level, mother's education, the number of siblings and volumes of books in the home could be shown to relate to the achievement a child displayed. The perceived dependence of achievement levels on student home variables resulted largely from Coleman's 1966 report, Equality of Educational Opportunity, in which he demonstrated from a large sampling that school facilities, curriculum, staff and process were less important in determining student achievement than home environment variables. Walberg and Marjoribanks (1976) added to this notion by demonstrating that 75% of post-test variance was attributable to pre-test achievement and a very complex home environment variable.

The school's potential to help disadvantaged children was greatly downplayed. It was believed that if you start with a deficient input, you end up with a deficient product and the process (schooling) did little to alter that. Poor underprivileged ethnic minority children in urban centres

achieved below national norms on basic educational achievement tests (usually reading and arithmetic) almost without exception. Likewise, schools in these urban centres, populated by these disadvantaged children achieved below national norms, almost without exception.

Recently, educational researchers have followed the lead of industrial and economic researchers who have used process-product analysis techniques for many years. Before adopting process-product techniques educators had frustrated themselves by achieving insignificant correlations between a great host of single process variables and student achievement. Logic dictates that if only 25% of achievement is attributable to elements within the school environment (Walberg, 1976) it is foolish to expect to find a significant causal link between any single process variable and achievement. Student achievement is far too complex and integrative for any single variable to have a great affect. With process-product studies using regression analysis, however, rather small effects of many positive process variables can be grouped to form "a critical mass" (Austin, 1979) which can be shown to relate to better achievement. Rutter (1979) concludes, "the association between the combined measure of overall school process and each of the measures of outcome was much stronger than any of the associations with individual process variables." (p.179)

In the early 1970's researchers looked at the "almost without exception" (Edmonds, 1979) scores of underprivileged schools and started investigating the exceptions. Research began

to uncover many exceptionally effective schools and to note which elements in these effective schools were common and probably related to the abnormal achievement. Effectiveness became defined as the production of unexpectedly high achievement levels by individual schools on reading and arithmetic tests compared to national norms.

This chapter will review the findings of twelve studies on effective schools as well as the comments of a number of reviewers of these studies. These studies and reviews along with some additional reactions to the studies and some individual case study reports combine to form the body of writings which constitute the Effective Schools Literature. The significance of this research on effective schools has been to "reduce...the dependence of student performance on family background" (Cohen, 1981) and to strongly suggest that "schools can be a force for...good behaviour and attainments" (Rutter 1979, p.205).

B. The Current State of Effective Schools Research

The studies provide little or no quantitative data except those identifying the schools as "exceptional or outliers." (Austin, 1979). Once they were thus labelled, the method used to determine the critical elements in these schools involved observations and interviews and therefore, the research findings are given in descriptive rather than scientifically precise terms. Our language being what it is--imprecise and subjective--much time will be spent in this paper analyzing the precise meaning of a researcher's findings and attempting to find common terms to allow for comparison between studies.

1. Individual Study Findings

Table 1 lists the observations and comments relevant to this review from twelve studies which were conducted between 1969 and 1980. The comments are divided into five categories to facilitate a comparison although many of the comments pertain to more than one of the categories. The characteristics replicated in the various studies provide a good list from which one can determine a pattern of critical elements for effectiveness.

Table 1 Characteristics of Effective Schools

The Study	Principal	School Policies/Emphasis	Climate	Staff	Other
Yeber 1971	-strong instructional leader -resource allocator and distributor	-school-wide stress on reading -careful student monitoring -individualized instruction	-orderly, purposeful, relatively quiet, pleasure in learning -high expectations	-accountable to principal -additional reading personnel	-abundant varied material -phonics method
New York 1974	-stable, fair, flexible, foresightful -competency-based authority	-routinized discipline -reading success priority -staff-wide consistent approach	-high expectations for students -teacher confidence in efficacy -atmosphere in which learning could take place -respectful-caring attitude of para-professionals -orderly, peaceful, efficient -parent/school/student collaboration	-free to teach instead of disciplining -high job satisfaction	-good home-school communication
Michigan 1977 in Brookover, J.B., 1979 also D'Amico, 1982	-assertive instructional leader -personally monitored achievement -task-oriented disciplinarian	-school wide academic emphasis -staff accept emphasis -good clear program monitoring	-high expectations that all students can master basic skills -school wide feeling of ability to progress and achieve -high student sense of control of destiny	-believe in student ability -confident in personal ability -committed to school goals	-high percent of direct instruction in target area (reading) -high level of engaged time -student feelings of efficacy
Maryland 1979	-instructional leader (example) -power by expertise	-high expectations of students and staff -consistent emphasis on consensual objectives	-sense of consistent direction attributed to fewer goals but schoolwide focus -confidence by staff and students for reaching goals -favourable climate can exist in low SES school also.	-positive belief in student ability -subjective & personal in evaluating students -warm, responsive yet achievement oriented -close student monitoring	-high student self-concept -good home-school relationships
Phi Delta Kappan 1980 in Duckett, W. and others, 1980 also D'Amico 1982	-strong, supportive leadership -enabler- allowed teachers to concentrate on teaching	-clear focus on basic skills -shared ownership of school goals with parents & students -routinized discipline procedures	-high expectations for student achievement in math & reading -pupils wanted to be in school -expectations-high, well known accepted & achievement oriented	-cohesive instructional approach and emphasis -accepted accountability for success -high morale & staff retention	
E.T.S. 1975 in Stoll, L.J. 1979		-coordinated effort to improve reading -basic skills emphasis -increased money & time spent on reading - shows priority		-united in concern for reading achievement -ownership of school goals -collegial problem solving -regular sharing sessions	-reading leadership effective & apparent -plentiful supplementary materials
Delaware 1979 in Venezky, R.L. and others 1979	-achievement oriented disciplinarian -frequently monitored progress to adjust material allocation	-common schoolwide goals and staff focus -instructional efficiency -high engaged time -good community communications -homogenous reading grouping	-achievement oriented -consistent coordinated effort -continual monitoring ensured student & teacher accountability	-adjusted to personalize instruction for each student -cooperative and united in purpose	-material plentiful
California 1976 in Sirotnik, K.A., 1981 also edmonds, R., 1979 also Sweeney, J., 1982.	-supportive, enabler of more effective teaching time -strong leadership	-consistent, continual monitoring of students -emphasized teacher instructional time priority -high expectations backed by monitoring	-higher student effort & enjoyment -atmosphere conducive to learning	-felt supported by administration -freed of clerical & administrative work by aids	-resources plentiful and varied

Table 1 (con't)

The Study	Principal	School Policies/Emphasis	Climate	Staff	Other
E.S.A.A. 1977 in Shoemaker, J. and others, 1981 also Sweeney, J., 1982	-achievement oriented	-instructional emphasis communicated to teachers -accountability backed by failure of low achievers	-achievement prioritized	-task oriented approaches	
Philadelphia 1979 in Squires, D.A. and others, 1980 also Shoemaker, J. and others, 1980	-increased monitoring yielded increased achievement	-obvious reading priority		-reading specialist employed	
London 1979 in Rutter, M. and others, 1979 also D'Amico, J., 1982		-academic emphasis -frequent homework & staff monitoring ensures its assignment and improved achievement -monitoring of curriculum emphasis and staff consistency was related to success	-cooperative & productive atmosphere -affective principal emphasis cited as yielding negative academic success -well communicated, accepted standard of behaviour -pleasant, comfortable accessible working environment	-staff consistency of focus aids achievement -staff approachability on personal problems yields exam success (collaborative attitude) -collegial decision making	-academic success strongly related to ability level at secondary level. -time on topic not significantly related at secondary level: its up to students to learn given good atmosphere & opportunity
McDill, Rigsby & Meyers 1989		-emphasis on academic performance competitiveness & intellectualism by faculty & students (academic emulation) -accelerated curriculum for superior students yields improvements (i.e. effort rewarded immediately)	-academic emulation schoolwide -teachers support intrinsic value of knowledge -peer group emulation of high intellectual standards -intellectual and social camaraderie between schools & families shows acceptance of goals		

Note: Except the E.T.S. and E.S.A.A. studies, writings of the original researchers were used to extract the elements cited in this table. The elements attributed to the E.T.S. and E.S.A.A. studies were extracted from secondary sources as cited.

2. Reviews of the Research

In addition to the comparison of critical elements for effectiveness provided in Table 1, Table 2 provides a comparison of the findings of four research reviewers and the elements which they feel the literature supports as critical. These reviewers will further lend credibility to the list of essential characteristics to be drawn from the research and expounded upon in more detail.

Of the four reviewers, Austin, Edmonds and Stoll were involved in primary research on effective schools. - Austin in the Maryland Study, Edmonds in the Michigan Study and Stoll in the New York State Research.

Table 2

A Comparison of Reviewers

Characteristics Compared	Edmonds	Stoll	Austin	Shoemaker
A. Strong Administrative Leadership	X	X	X	X
B. Good Learning Climate	X	X	X	X
C. Principal Emphasis Monitoring	X	X		X
D. High Expectations For Students	X	X	X	X
E. Objectives Known & Focused on by Staff & Students	X	X		X
F. Abundant Supplementary Resources	X	X		
G. Concern for Individualized Instruction	X	X		

In addition to the characteristics mentioned by two or more reviewers, many characteristics that appear important have received the notice of only one of the reviews. Among these characteristics were: use of phonics in reading programs,

positive student self-concept, longer instructional day, good communication with the community, principal esteemed as an expert, direct correlation between observation frequency and achievement, failure of low achieving students, and teacher satisfaction / anxiety. Some of these may be valid but because of their lack of duplication in the studies, they can't be considered essential to effective schooling. Further research may prove them to be very important in specific situations and this may be a good direction for future research.

3. Major Findings on School Effectiveness

The information provided in Table 1 in combination with the analysis of the reviews listed in Table 2 causes five elements to appear to be critical in and fundamental to school effectiveness.

The critical elements are:

- 1) good communication of, and focus on specific goals and objectives;
- 2) high expectations for student achievement, schoolwide;
- 3) a climate conducive to learning;
- 4) efficient, effective monitoring; and
- 5) strong administrative leadership.

It seems somewhat trite to describe effective schools as those with strong leaders, well communicated and clear objectives, good climate, high expectations and a comprehensive monitoring system. These characteristics would seem, naturally, to be basic to all schools. The fact that the schools studied were considered overachieving, or outliers leads one to believe that, in fact, these characteristics are not pervasive in all or

even most schools.

If these educationally sound principles are not common, what is happening in most schools and why are low S.E.S. children not achieving despite their backgrounds? Perhaps Savage (1979) gives good insight when he says, "As an administrator, it is easy to fall into the rut of seeing your job as handling administrative detail, attending meetings and tackling discipline problems. Education can fall into the cracks." (p. 544)

Many writers have noted the multiplicity of activities that make up an administrator's day and others have cited discipline as a high priority. The problem is that these necessary involvements lead administrators into the trap of goal displacement. Administratively efficient functioning takes the place of academically productive functioning.

Since the five characteristics listed are essential and uncommon, they will be described in further detail.

4. A Closer Look At The Findings

a) Objectives. The literature stresses the importance of the salience of the school plan. A good school will have a plan that is well known and attended to by staff and students. It will predominate over all other student activities in importance and will probably receive increased time and material allocations. The pursuit of the objective will be coordinated so that each staff member will be cognizant of how his/her contribution towards the objective dove-tails and overlaps with other staff members. Students will be well aware of their learning objectives and will be prepared formally to demonstrate their

knowledge on evaluations.

Austin (1979) capsulizes this theme in citing a study which "confirms the faith of those who believe that no improvement in the quality of schooling is likely unless the people in individual schools, in concert with the parents and children they serve, agree on what they want to accomplish." (p. 14)

b) Expectations. Accusations of low expectations have been levelled at many schools and cited as a major obstacle to student achievement. The studies say expectations for all students by all staff must be high enough to challenge the ability of the individual. Cooper (1979) shows how low expectations are communicated to students and convince them of the futility of trying since their efforts probably will not be the determiner of success.

All the scholars in Table 2 identified high expectations as a prerequisite to maximum performance. This characteristic is not only vital to student success but also fundamental to maximum teacher performance.

Washington (1980) places the responsibility on principals to be "positive Pygmaliions" in establishing a sense of confidence in individual staff members and a sense of unity-of-purpose in the staff as a whole. He refers to a 1976 study by a researcher (Miller) who supports his notion that "principals influence teachers who influence students to maintain low levels of achievement or who can influence students to achieve to the best of their ability." (p. 185)

One reviewer felt research was consistent in exposing a

"crucial connection between expectations and achievement," and that students tended to rise to the levels of expectations communicated by teachers and principals. (Shoemaker, 1981, p.181) Edmonds (1979) felt students who fell below an acceptable level attributed to their ability, should be checked closely and perhaps become recipients of increased staff time and supplementary materials.

Despite the knowledge and personal experience we each have, it is disappointing to note that many educators still attribute the lack of achievement in even basic skills to the pupil's inability to learn. That belief will assuredly be communicated to the pupil and that communication will be a key factor in the pupil's perception of his ability. Inherent in the teacher's original expectation is his confidence in his personal ability to produce cognitive gain in every child. Perhaps the key to the student-inability cop-out is the self-confidence of the teacher to perform his job effectively. This confidence can be enhanced in part by the atmosphere created in the school by the principal. One author (Coleman, P., 1978) credits the principal with having the greatest single influence on teacher attitudes, negatively or positively.

c) Climate. Good school climate is seen by the majority of students and all four reviewers as a fundamental component of any effective school. School climate, as seen in the Effective Schools Literature, is the sum of expectations (principal, teacher, and peer), local atmosphere (quiet and orderly as opposed to noisy and frantic), and program applicability (student

perceived purposefulness as opposed to pointless following of instructions). It is "the total environmental quality within a given school building" (Anderson, C.S., 1982).

Brookover (1981) in referring to the state of Effective Schools research emphasizes "the complexity of the school production system, and the necessity for examining the manner in which the multiple variables interact with each other in the total school social system...the school is not a simple aggregate of independently functioning variables." (p.6)

The Weber (1971) and New York (1974) studies detail their description of effective climates. Effective schools', hallways and classrooms were orderly and relatively quiet. Students and activities in general appear to be purposeful and yet not oppressive--on the contrary, both studies observed the noticeable pleasure and satisfaction the students had in learning. This notion of student satisfaction with control is consistent with the findings of Willower (1977). He found a preference by younger students for higher teacher custodialism and yet he also found a less custodial ideology in elementary teachers. The fact that overachieving schools were more custodial and the pupils were happier lends support to the notion that purposefulness, pupil satisfaction, and achievement are linked to some degree at least at the elementary level.

The New York (1974) study goes on to describe a "collaborative relationship" between parents, students, and school personnel in the effective schools. Teachers were personally interested in their students and available to parents

after school. The teachers were also cooperative in contributing extra time and personal money and materials.

The key to good climate seems to be the creation of an atmosphere of unity, ability, and accomplishment in the school and supported by the homes. The importance of support from the homes would doubtlessly be seconded by proponents of home-based reinforcement such as Barth (1979) and McDill (1969). Once this atmosphere of collaboration was established it would be supported by staff and student peer norms.

d) Monitoring. Teacher accountability, student accountability, program readjustment and resource allocation were some of the purposes cited which require effective monitoring. Methods of monitoring ranged from standardized tests, to informal principal-teacher lunches to frequent formal observations. One proponent of the informal observation technique was described as "quietly omnipresent." (New York, 1974) While Shoemaker (1981) claimed a direct relationship between monitoring frequency and reading improvement in the Philadelphia Study, most writers considered monitoring as just one of a number of necessary prerequisites to effectiveness.

Some studies extended the purpose of evaluations from student feedback and assignment, to include them as a basis for program improvement (Brookover, 1981) and even material selection and coordination (Stoll, 1979 and Edmonds, 1979). Venezky (1979) follows the monitoring theme to an even more comprehensive summary. He recommends the use of evaluations in changing student motivation, teacher efficiency, staff selection and

resource deployment.

Effectively used, a well developed monitoring system will become the eyes of the organization. The administration will use it to guide the school to its objectives. Teachers will use it to fine-tune their interactions with students and students will use it as a source of encouragement to duplicate good work or to motivate them toward better effort.

e) Strong Administrative Leadership. By far the most pervasive characteristic cited by the studies and reviewers was the presence of an administrator who was able to create and maintain effectiveness in a school's operations and productivity --someone to initiate and coordinate the other fundamental prerequisites. It must be noted that in the Effective Schools literature there is a conspicuous absence of consensus on what characteristics this leader must possess or what activities he/she must be characterized by. Many activities, traits and abilities are cited by various of the studies and reviewers and yet the only thing replicated in study after study is the idea that the leader will be the correct person for the task at hand. He/she will be an individual, resourceful, competent, confident and internally motivated. He/she may have developed certain policies and processes which would be totally disastrous in another school but policies and processes which form the backbone of his/her school's success.

A broad theoretical and practical background is essential in dealing with the diversity of issues which must be faced daily. Faily (1980) suggest that an expertise in planning,

decision-making, communication and ethical behaviour (including honesty, fairness, compassion, and concern) is fundamental to the success of any administrative leader. The New York (1974) and Weber (1971) studies were explicit in describing the tenacity and stability needed to improve a school's achievement. Insight and objectivity in clarifying the schools problems and devising solutions are essential. Often the principal is the only one with the perspective of board concerns and realistic local feasibilities. Along with objectivity in seeing weaknesses and setting goals, the successful leader is highly task-oriented and assertive. Virtually every study that dealt with orientation expressed the need for good human relations but emphasized that cognitive achievement superceded affective gains in prioritizing objectives. (New York, 1974; Brookover, 1979; Duckett, 1980; Venezky, 1979 and others.)

Task orientation by the principal was coupled with sometimes unusually high expectations for students to achieve and for staff to be instrumental in that change. This administrative characteristic is noted by every study that addressed expectations. Supportive, optimistic enthusiasm when dealing with staff or students was seen by many studies (New York, 1974; Stoll, 1979; Sirotnik, 1981; Dukett, 1980) which cited this trait as the basis for staff security and a schoolwide feeling of "we-canness."

Among the commonly mentioned characteristics is the idea of the principal as a political gamesman--adept at going to the superintendent or the secretary-treasurer or even rallying

community support to procure the resources he deems necessary for his teachers.

There will always be exceptions and additions to any list of desirable traits because each effective leader is unique--just as each effective school is unique. Austin's summary for school effectiveness is applicable to administrative effectiveness as well. "There is no single factor that accounts for a principal being classified as exceptional. These administrators appear to have a critical mass of positive factors which, when put together, make the difference." (Austin, 1979)

This in-depth look should serve to impress the reader with the integrative and interdependent nature of the five critical elements cited. None of the five could be expected to produce effectiveness if isolated from the other four and it is unlikely that an effective school would retain that distinction if one of the critical elements were removed or negatively altered. Further study of any one element in isolation would seem to be futile and yet it seems that an expanded understanding of the term "climate" could yield a term which could be expected to best integrate the five elements which the Effective School Literature supports as essential.

A good understanding of the term "climate" as it will be used in the remainder of this paper is derived from a synthesis of the definitions proposed by C. Anderson (1982) and Rutter (1979). "School climate includes the total environmental quality within a given school building," (Anderson, C., p. 369) or as

Rutter (1979) terms it, a school's "ethos".

C. Literature Strengths And Limitations

The Effective School Literature has benefited the field of education in a number of ways. It has helped, as one author notes to "reduce the dependence of student performance on family background." (Cohen, 1981) Educators, as a result of the Effective Schools research, have been able to shake the custodian labels they were burdened with after the 1966 Coleman report (Equality of Educational Opportunity) and to prove that "major determinants of student...achievement are within the school's control." (Stoll, 1979) Hope (of improving achievement) has been rekindled and a focus is being brought into research on effectiveness as critical factors are being illuminated.

The research has shown five elements to be critical to effectiveness that are within the school's realm of alterable factors. Work is currently being done to address these factors at the elementary level. It is at this point (in the development of Effectiveness research) which this writer hopes to make a contribution--firstly by clarifying and classifying the research results and then by initiating the development of a tool to measure the critical climate elements (for improved achievement) and to provide clear prescriptions for practical attempts to improve the school climate and thereby overall achievement.

There are a number of shortcomings in the literature. Firstly, an objective look at the research results will reveal them to be couched in ambiguous terms. This vagueness lends to their acceptability and apparent replication in other studies but

makes a clear diagnosis of precise meanings difficult and disallows any possibility of making specific prescriptions to alter specific school situations. It would be impossible, from the literature to ascertain whether my school has a poor, mediocre or good climate and equally impossible to prescribe areas of focus or activities which could improve my school's climate. It would be equally impossible, without a closer look, to determine whether or not a specific administrator is a strong leader and how to improve his/her leadership.

A second weakness lies in the subjects of the studies in the literature. Of the twelve cited in this paper and others unavailable to this writer, only two deal with secondary schools. The vast majority of effectiveness research is done at the elementary level and there are logical reasons to doubt the validity of their findings at the secondary level. Firestone states that "some of the features that characterize effective schools are significantly less prevalent at the secondary level" and that certain secondary structural factors "undermine agreement on goals and block secondary administrator influence." (1982, p. 53) Both of these factors have emerged as critical in the literature and yet appear to be unattainable in large secondary schools.

A third weakness in the literature is the absence of a tool which could be used to determine a school's climate profile (in relation to effective climate elements) and a tool which, when applied, could yield prescriptions which, if addressed, could improve the climate and thereby the overall achievement.

A fourth weakness is to be addressed in this paper. The Effective Schools research (largely because it is predominated by elementary school subjects) doesn't tap the main experiencers of the climate problems and those who are most closely and regularly associated with the schools' climate--the students. Most studies use observation by educators and surveys of staff and/or parents. Those studies surveying students, do so in terms other than those used by the research to describe critical elements (probably because elementary students may not understand some abstract terms such as expectations or school objectives). In any case, at the secondary level, there appears to be no reason not to ask the students how they rate their school on the things the researchers have cited as critical.

Chapter 3

Methodology

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Because of the sparsity of climate research at the secondary school level, this project has the potential of both providing a clearer definition of climate specific to secondary schools and of developing a tool which will be capable of measuring that secondary school climate.

This methodology chapter will be divided into two sections addressing the potentials just mentioned. Section A will explain the rationale for including the climate items used on the questionnaire. Those deemed crucial to secondary schools by this author. Section B deals with the final composition of the questionnaire, its administration, and the analysis techniques used.

A. Research Basis and Item Development

A study of the literature on school effectiveness yields five elements deemed to be crucial to higher student achievement: strong administrative leadership, high expectations, good school climate, clear school objectives and effective monitoring.

Recognizing that these results came from studies dominated by research strictly in elementary schools (10 of the 12 cited studies) this writer attempted to differentiate the findings at the elementary level from those at secondary schools. It will be shown that, research which does deal with secondary students consistently identifies conducive climate as a crucial

prerequisite to high student achievement. A close look at the studies dealing with secondary students (hereafter termed secondary studies) will reveal that the specific elements considered crucial to conducive climate and achievement at the secondary level may be slightly different from those at the elementary level. It will also be shown that the importance of certain elements increases while that of others decreases as students advance through their schooling. A comparison of the elements cited in the secondary studies will be made with the elements from the elementary students, and the disparities will be discussed to lend credibility to the inclusion of some items not deemed crucial by the elementary school studies. The student questionnaire resulting is a compilation of questions designed to measure the elements proposed as significant to high school climate by the literature. By pilot testing this questionnaire it is hoped that a clearer understanding can be gained of those elements which remain significantly related to the school's overall climate rating and of those elements related to marks (achievement). Input regarding critical secondary school climate elements has been extracted from an article by Anderson (1982) as well as from the primary research done by Rutter, Maughan, Mortimore, and Ouston (1979) and McDill, Rigsby and Meyers (1969).

An unabridged list of elements, (listed in terms as close as possible to those of the researchers) has been developed including those cited in either elementary or secondary schools. The resulting table (3) shows which studies support the inclusion

of the stated element. The list of elements in Table 3 will be grouped into major areas of influence. A rank order of the elements based on their frequency of citation (from the studies) will then be developed for the elementary and for the secondary studies. A comparison of the rankings will reveal a change in the nature of the elements that influence effectiveness at the two different school levels.

TABLE 3

London (Rutter, 1979)
 : McDill 1969
 : : C. Anderson 1982
 : : : New York, 1974
 : : : : Weber, 1971
 : : : : : Michigan (Brookover, 1979)
 : : : : : : Maryland, 1979
 : : : : : : : P.D.K. (Duckett, 1980)
 : : : : : : : : E.T.S. (Stoll, 1975)
 : : : : : : : : : Delaware (Venezky,
 : : : : : : : : : : 1979)
 : : : : : : : : : : : CA. (Sirotnik,
 : : : : : : : : : : : : 1981)
 : : : : : : : : : : : : : ESAA (Shoemaker,
 : : : : : : : : : : : : : : 1981)
 : : : : : : : : : : : : : : : Philadelphia
 : : : : : : : : : : : : : : : (Squires,
 : : : : : : : : : : : : : : : : 1980)

THE ELEMENTS

1. achievement as a priority	* * * * *
2. staff accountable	* * * * *
-setting homework	
-monitoring homework	
3. established behavioural standards	* * * * *
4. cooperative atmosphere pupil-teacher	* * * * *
5. pleasant, accepting atmosphere	* * * * *
6. consistent staff emphasis on clear objectives	* * * * *
7. staff approachable (personal student problems)	* * * * *
8. collegial decision making (see #21)	* * * * *
9. rapid advancement for achievers	* * * * *
10. peer acceptance of academic excellence	* * * * *
11. teacher's educ. level	* * * * *
12. student ability overrides other character	* * * * *
13. frequent student monitoring	* * * * *
14. reading specialist employed	* * * * *
15. principal supportive (enabler)	* * * * *
16. strong leadership	* * * * *
17. high expectation for achievement	* * * * *
18. resources plentiful-varied	* * * * *
19. homogenous reading groups	* * * * *
20. high student sense of efficacy self concept	* * * * *
21. high staff sense of efficacy	* * * * *
22. community support enlisted	* * * * *
23. parental support sought	* * * * *

Note: The London and McDill Studies involved secondary school students and the Anderson Report involved junior secondary students. All others involved elementary school students.

The twenty three elements included in table 3 have been listed in no particular order but as closely as possible to the original terms. It can be argued that there is no meaningful difference between some of the elements listed despite the different descriptive terms. Many of these elements can be re-grouped into slightly more general definitions (to reduce the number of elements and thereby redundancy) without returning to the vagueness revealed in the descriptors of Table 2 and without losing the specificity intended by the research.

Table 4 then is a compilation of some of the closely related elements of Table 3. Its purpose is firstly to provide us with a comparison of the changing nature and degree of importance of some elements as the student's schooling progresses, and secondly to provide more elements to test at the secondary level and eliminate some which can be assumed to be insignificant at the secondary level.

TABLE 4

FREQUENCY OF CITATION
(as a fraction of the total
number of studies at this level)

ELEMENT-NAME	ELEMENTS-INCLUDED FROM TABLE 3	ELEMENTARY STUDIES	SECONDARY STUDIES
1. ACADEMIC ACHIEVEMENT PRIORIZED	#1	8/8	3/3
2. CONSISTENT EMPHASIS ON SCHOOL OBJECTIVES	#6	8/8	3/3
3. STRONG LEADERSHIP	#15 & 16	7/8	1/3
4. HIGH EXPECTATIONS AND CLOSE MONITORING	#13 & 17	8/8	3/3
5. CONDUCIVE ATMOSPHERE-SUPPORTIVE, PLEASANT, COOPERATIVE	#4 & 5	7/8	3/3
6. STAFF ACCOUNTABLE FOR SETTING HOMEWORK AND MONITORING	#2	5/8	3/3
7. STAFF INVOLVEMENT IN DECISIONS & FEELING OF EFFICACY	#8 & 21	7/8	0/3
8. STAFF APPROACHABLE FOR STUDENT PERSONAL PROBLEMS	#7	2/8	3/3
9. PEER ACCEPTANCE OF ACADEMIC ACHIEVEMENT GOALS / EMULATION	#10	2/8	3/3
10. STUDENT SENSE OF EFFICACY, INVOLVEMENT, OWNERSHIP OF SCHOOL	#20	3/8	3/3
11. ESTABLISHED, ACCEPTED BEHAVIORAL STANDARDS	#3	3/8	1/3
12. STUDENT ABILITY INTERVENES IN ACHIEVEMENT LEVEL	#12	0/8	2/3
13. PARENTAL SUPPORT SOUGHT	#23	2/8	2/3

Notice in Table 4 that the total number of Elementary Studies has been reduced to 8. The E.S.A.A. and Philadelphia studies had a very narrow focus and were eliminated in this comparison so that they might not negatively influence the frequency of citation of the elements cited by the other studies.

Of the five critical factors cited by reviewers of the Effective School Literature (Table 2), Table 4 reveals that Strong Leadership becomes greatly devalued as an integral part of student achievement in secondary schools. This finding supports Firestone's contention (1982) that administrators have greatly reduced leadership influence in high schools. Because of the increased size, and departmentalization of the staff and because of the increased content specialization of the teachers, the principal has less contact with individual teachers, in which to demonstrate instructional leadership and oversee classroom management. Firestone points out the difficulty high school leaders have in making teachers assume school wide goals--especially when those goals reflect concerns over basic skills. Many high school teachers protest that basic skill teaching is not their job.

Though the teachers may not share a specific goal (such as reading improvement at the elementary level) it is worthwhile to note that all three secondary studies have cited a consistent emphasis on school goals as critical. It must be deduced that secondary school-wide goals are not something skill-specific like reading or computation, but broader, such as motivating students to achieve to the best of their ability within in the field of

their enrollment. (It should be noted that vocational streaming occurs in the secondary schools resulting in differentiated academic skill requirement levels.)

Another difference seen between schooling levels is the apparent lack of concern by secondary teachers about making school-level decisions. As noted in Table 4, two of the studies mentioned teacher involvement in planning of teaching loads and curriculum but it is relatively cumbersome on a staff of over 70 teachers for everyone to have input on the running of the school--this is where administrative expertise is appreciated. A good secondary principal is more likely a procurer of resources, a manager of facilities and staffing and a public liaison officer--keeper of the front gate. Leadership expertise is recognized as the leader enables teachers to perform their job with the least number of obstacles (from unruly students and inquisitive outsiders alike) and with an adequate supply level.

The next difference involves the evolution of high school students into independent, self-motivating adults. High school students have started to chart personal lifetime courses and they require individualized counselling and confirmation of their goals. Elementary students are still part of a group struggling to acquire skills fundamental to everyone in the group and therefore their concerns are less likely to be of an individual nature (at least as far as the concerns impinge on their future aspirations). This hypothesized change of nature is further supported by element number 10 (Table 4) which shows the high

concern that secondary students have for being treated as individuals, and for knowing that their efforts yield results. They want their presence recognized and their efforts rewarded. The institutions that provide this facet of climate will yield better achievers according to the literature.

Element number 9 (peer academic emulation) and number 13 (parental support of school) seem distinct and yet they are linked. Number 9 seems to refute the evidence of number 10 and yet it is indicative of the whole nature of adolescent psychology. Peer groups never again have the intensity of importance in life that they have in the early and mid teen years. Students crave to be part of an identifiable group as revealed by their dress, speech and physical proximity and yet, in their struggle to gain independence they demand to be seen as independent individuals with the ability to determine their futures. They need to know that their hard work will result in good grades and yet they need that work prefaced with the understanding that their friends will accept or even honour their high achievements and resulting recognition. Their independent efforts must be valued and yet (as revealed by # 13) they often need the external motivation indicative of younger children and supplied from home. This writer believes that parental support may not be cited by most of the elementary studies but that it is received by the educators of younger children. On the other hand, parental intervention in secondary schools is greatly reduced (partly because of parental withdrawal and partly because of student censorship of their parents) unless it is solicited by

the school (as was the case in both of the secondary studies cited). While elementary parental involvement is routine (and therefore not necessarily solicited), secondary parents are less likely to be directly involved unless they are approached by the school seeking support.

The last element showing disparity between elementary and secondary school climates is the overriding influence of student ability on achievement. There are virtually no normal children who are incapable of conceptualizing the fundamental skills of reading and computation and yet there are a limited number of adolescents who are both conceptually-prepared and motivated to succeed at upper level physics and mathematics. Fortunately for this study, high school streaming has greatly reduced the incidents of students finding themselves enrolled in courses they are incapable of succeeding at. Those incapable of higher cognitive skills whether for reasons of aptitude or motivation are usually successful at and streamed into more practically oriented computational skills, often fundamental to trades or everyday life routines. This program differentiation has allowed students to achieve well in areas they are prepared and motivated towards thereby reducing the incidents of students getting very low marks because of insufficient programs available in which they can succeed.

In addition to the differences in the nature of schools revealed in Table 4 (and the subsequent need to address different climate possibilities) it remains apparent that the secondary studies support the basic premise of this project that better

school climate (as defined in chapter 2) is still associated with higher student achievement and therefore effectiveness. An implication raised by the changing importance of elements in Table 4 is that the source of motivation for achievement moves from external (administrators and staff) towards internal (self-esteem and independence) as students move upward through the school system. The students' needs (before achievement can be enhanced) concern their feelings about the adequacy of their environment, their relationships with those important to them and their personal views of their future and their abilities.

If a questionnaire were developed solely from the results of the three secondary studies, the exclusion of many of the elements deemed critical by the elementary studies may endanger the validity of the findings. It must be recognized that whether we refer to effective elementary climate or effective secondary climate, there will probably be factors and elements fundamental to both. As revealed by both Tables 3 and 4, some elements are critical to effective learning regardless of the age or developmental stage of the learner. In many instances the question used in a student questionnaire to measure a particular factor may have to be adjusted to be understood by respondents of different ages but the factor can remain fundamentally similar.

Some of the elements yielded by the literature and apparently crucial at both levels include: achievement as a priority, consistent emphasis on objectives, high expectations, conducive atmosphere and staff press for productivity (previously termed accountability). Additional areas revealed by the

secondary studies to be included in the questionnaire are: staff approachability or student-staff relationships, peer influence on achievement, student sense of efficacy and personal motivation and parental press for achievement.

B. The Questionnaire

In the survey questionnaire the elements being examined for significance are grouped into three categories or proposed sources of influence on school climate. All three influence groups are considered crucial by the Effective Schools Literature. The three categories are further divided into component elements which have been cited by one or more author/researcher. Some of the climate elements were listed specifically in some studies while others were alluded to in general or ambiguous terms. It is this ambiguity (as described in Chapter One) which presents the major problem of determining exactly which researcher believes which elements are crucial. The sources of influence and component elements along with the studies which cited them are given in Table 5. The table also indicates the number of questions addressing each element in the pilot questionnaire. The individual item statements were developed by the writer in consultation with the principal in the subject school and teacher colleagues. They were then checked for clarity and focus by the writer in discussions with approximately sixty-five Grade 11 students from the subject school. In developing the specific statements, an attempt was made to address the proposed elements by a number of slightly

different statements which, it was hoped, would highlight different aspects of and yet focus sharply on the intended elements.

Table 5

Source of Influence	Proposed Climate Elements	Study Cited by/in	Number of Questions	Question Number
A) School Environment -Conducive Atmosphere	1) school is responsive to student needs	Rutter, McDill	3	A1-A4
	2) school is open to parental intervention	McDill	3	A4-A6
	3) students feel effort is worthwhile (efficacy)	New York, Michigan, Maryland	3	A7-A9
	4) student-staff cooperation and respect	Rutter, Michigan, Maryland	5	A10-A14
	5) student-student relationships (friendship, respect)	Rutter, Webb	5	A15-A19
	6) school prioritizes academics clearly	All Studies	3	A20-A22
	7) Purposive Atmosphere:	All Studies	8	A23-A30
	a) non-disruptive	General Synthesis		
	b) orderly student behaviour	Rutter		
	c) clear behavioural expectations	General Synthesis		
d) class time uninterrupted	Anderson			
e) students purposive in class	McDill, Rutter			
f) class time productive and appreciated (joyful)	General Synthesis			
B) Adequate Facilities, Program & Personnel	1) facilities adequate/available	Rutter, Weber, E.T.S., Delaware California	2	B1,B2
	2) material/equipment adequately supplied	Rutter, Weber, E.T.S., Delaware California	1	B3
	3) teachers competent/helpful	Firestone	3	B4-B6
	4) programs applicable to student expected future	Coleman, Anderson, Brookover	1	B7
	5) course content is consistent from teacher to teacher	Personal Query	1	B8
C) Academic Press	1) by staff	General Synthesis	4	C1-C4
	2) by parents	McDill, Anderson, Maryland	4	C5-C8
	3) by peers	McDill, Rutter, New York	3	C9-C11
	4) personal motivation	McDill	3	C12-C14

The questionnaire (see Appendix A) contained a cover-letter/authorization page, a statistical profile page and approximately fifty questions which were intended to measure sixteen elements (or twenty-one if Purposive Atmosphere is further divided). The analysis process started with a Varimax rotated factor analysis (Principal Components Method) of the questionnaire items to see which factors would be revealed using a minimum acceptable loading level $\geq .30$. The overall rating (C15) was recoded into three categories with "excellent, very good, and good" equalling 1; "adequate" equalling 2; and "poor" and "very poor" equalling 3. The items not loading on any factor were eliminated from further consideration.

The next step in clarifying the component items of the factors was two Chi-square cross tabulation tests--one with the overall rating and all other items, the second with marks and all other items. It was hoped at this point that the items loading $\geq .30$ on factors would prove to be significantly associated with the overall rating and marks since an association of marks with rating was still expected. On the overall rating cross tabulations, the rating item (C15) was again recoded as for the factor analysis. On the marks cross tabulation, both the rating and marks were recoded to three categories. The marks were recoded on the argument that students were asked to categorize themselves on "average marks" and that three categories, high (A and B), average (C+ and C) and low (C- and F) were as accurate as the self-reporting of student averages, and better suited to the chi-square test. A discussion of the achievement variable will

be undertaken in Chapter 5.

After using the cross tabulations to eliminate items with poor significance levels ($\leq .01$), the factors were inspected for items that both loaded at an adequate level ($\geq .30$) and remained significantly associated ($\leq .01$) with climate. These items were used to label the factors. Those factors with at least three items remaining significantly associated with rating and at least two items associated with marks were tested to determine if there was an association between the factors and the schools climate and student marks.

Four factors were tested in a Pearson Correlational Matrix against marks and overall rating (item C15), to determine their relationship. The marks item and item C15 (overall rating) were entered into the test retaining the six possible responses available in the questionnaire (Appendix A). The results are discussed in Chapter 4.

Upon completing a careful analysis of the survey results, this writer will examine the possibility of generalizing the use of student survey methods to determine a school's climate profile. The profile should, in turn, yield prescriptions for improving a school's climate and thereby its achievement levels.

The group surveyed included the grade eleven and twelve students of a large (approximately 1500 students) high school in an urban area. The students seemed to demonstrate a wide range of post-secondary aspirations, levels of academic success, and attitudes towards school. Because of this range the writer considers them to be a good sample for identifying status

variables and their effect on student perception of overall climate, and specific climate elements. The sample included 384 students--41% in Grade 11; 59% in Grade 12; 52% male; and 48% female.

Since the survey was intended to measure perceptions of climate the senior students were chosen for two reasons. It was reasoned by the writer that senior students would have had a longer time in the school in which to analyze its climates and that they would have been more capable of assessing highly subjective impressions such as teacher competency and work-load consistency. The only students who would have had no opportunity to respond were 80 approximately non-English speaking students who had not as yet been mainstreamed. It was reasoned by the writer that these students were new to the school, isolated largely in one section of the school (the E.S.L. classrooms) and would therefore not have been reliable perceivers of the school climate.

The questionnaire was distributed in March 1983, to the English classes since that is the only common course taken by all senior students. The time for administering the test was chosen to avoid the influences of major holidays, testing and report card distribution periods. It was completed at school and returned anonymously along with an authorization sheet to the same English teacher, from whom this writer collected them.

Chapter 4

Results

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A. Questionnaire Returns

By administering the questionnaires in the school, a high rate of return was realized. All students who received a questionnaire responded to part or all of the items. A number of students exercised their right, as volunteers, to not answer some of the questions and some of the responses were invalid due to "out of range" responses. The number of returns and those useable for the analysis tests were as follows:

Total returns: 384

	Frequency
Profile Returns: 1. Grade	384
2. Sex	381
3. Marks	383
4. Future plans	383
5. Parent Education	369
C15 overall rating	366

B. Factor Analysis

After the questionnaire was distributed and returned a Varimax rotated factor analysis was performed to determine which questions loaded together to form factors. Question C15 (overall rating) was recoded so that "Excellent, Very Good and Good" equalled 1; "Adequate" equalled 2; and "Poor" and "Very Poor" equalled 3. A value of .30 was used as the minimum acceptable loading level and the analysis results yielded sixteen potential factors as outlined below:

Table 6

Factor number	Name/Descriptor	Questions included
1	student confidence in school to educate	A3, B3-7
2	parental press for achievement	C5-8
3	staff concerned, fair, approachable	A1,8,9,11,12
4	cooperative, harmonious atmosphere (student-student, student-teacher)	A14-17,25
5	teacher press for productivity and achievement	A21,29,C2,3,4
6	Student self esteem/motivation	C12,13,14
7	peer acceptance of high achievement (emulation)	C9,10,11
8	school open to parental intervention	A4,5,6,C1
9	good friendship opportunities	A17,18,19
10	facilities/resources pleasant & accessible	B1,2,3 (3 only .29232)
11	students purposive, productive	A27,28,30
12	teacher affectiveness	A11,12,13
13	hallways are orderly and present examples of excellence	A22,24
14	consistency of workload and course content	B8,C9
15	fairness of marking	A7
16	academic priority stressed	A20

From the first test, weaknesses of the questionnaire became apparent. The percent of variance accounted for by all sixteen factors was only 42.3% and many of the factors appeared to be questionable. Factor 7 and 9 to 16 had three or fewer items loading and some factors shared specific items (Factors 3 and 12, 1 and 10). The students' ability to focus on clear factors was not apparent and most of the factors with more than three items grouping together to contain some unrelated items.

A number of groupings resulted which were not intended by the proposed questionnaire format (Table 5) and which did not seem to make sense in association with other questions in the group. An example of this is factor 8 where questions A4, A5 & A6 loaded together as intended but included C1 which seems quite unrelated. Teacher expectations (C1) seems to be out of place being grouped with the school's openness to parents (A4, 5 & 6). An attempt was made to press the questions into eleven factors since eleven of the sixteen proposed in the first analysis had three or more items loading on them and not loading on other factors. The result, however was a confusing set of unrealistic associations, and a percent of variance of only 36.1%.

A return to the original factor analysis seemed the wisest option and it was on this analysis that the remaining tests were based.

C. Cross Tabulations

In an attempt to clarify the nature of the factors proposed by the factor analysis Chi-square cross-tabulations were done comparing each questionnaire item with, on the first hand, the overall rating (C15) and, secondly, with the students' reported marks. Using the cross-tabulations, items were eliminated which did not associate significantly ($\leq .01$) with marks or rating. At this point, it was still hoped that there would be an association between marks and overall rating as well as associations between the strongest of the factors and the achievement and rating variables.

Table 7 below shows the sixteen factors (from the original

factor analysis) with the component questions of each and whether or not each question was significantly associated with marks and overall rating.

Table 7

F = Factor
 Q = Question
 R = Rating
 M = Marks
 - = no significant association
 + = a significant association between the item and rating or marks (<.01)

F	Q	R	M	F	Q	R	M	F	Q	R	M	F	Q	R	M
1	A3	+	+	4	A14	+	+	7	C9	-	-	11	A27	-	-
	B3	+	-		A15	+	-		C10	+	+		A28	-	-
	B4	+	+		A16	+	-		C11	+	+		A30	-	+
	B5	+	-		A17	+	+	8	A4	-	-	12	A11	+	-
	B6	+	+		A25	+	+		A5	-	-		A12	+	+
	B7	+	+	5	A21	+	-		A6	+	-		A13	-	-
2	C5	-	-		A29	-	+		C1	+	-	13	A22	-	+
	C6	-	-		C2	+	-	9	A17	+	+		A24	-	-
	C7	-	-		C3	+	+		A18	-	-	14	B8	-	-
	C8	+	-		C4	+	-		A19	-	-		C9	-	-
3	A1	+	+	6	C12	-	+	10	B1	+	+	15	A7	-	+
	A8	+	+		C13	+	+		B2	+	-	16	A20	-	-
	A11	+	-		C14	-	-		B3	+	-				
	A12	+	+												

From the results of the cross tabulations shown in Table 7 it is easy to eliminate questions which are not associated with marks or rating. It is interesting to note that many questions and even some entire factors are significantly associated with either marks but not rating or rating but not marks. Other factors seem unassociated with both variables (note: F2, F14, F20). At this point it should be mentioned that the association of marks with overall rating in this sample group was not significant (.0891) which seems contrary to the findings in the literature in which a school's climate was cited as strongly

predictive of achievement levels. What seems to be revealed by the insignificant association of marks and rating and the uncoordinated responses revealed in Table 7 is a dichotomy set of responses to the questionnaire. Students may view their school from two entirely different perspectives depending on whether reference clues dictate a response in terms of their perceptions about their marks or a response in terms of their perceptions about the school's climate. This point will be further discussed in chapter 5 as will a number of apparently significant but isolated questions revealed in the table.

Table 7 shows that at the senior secondary school level there are indeed factors which contain a number of items significantly associated with the overall rating of the school. It is also noteworthy that some of these climate factors are associated with student achievement. These relationships seem to address the question of high schools having identifiable climate characteristics.

One last test was performed to determine the association strength of the strongest of the factors with climate and achievement.

D. Correlational Matrix

Before specific factors were tested for their value as predictors of climate, a rigorous elimination process was undertaken to eliminate all but the strongest of the sixteen factors. This process may have eliminated potential factors as will be discussed in chapter 5 but the correlational matrix was intended to demonstrate the reliability of the questionnaire

method for use with high school students in revealing some school climate characteristics. Since the Pearson Correlation Matrix was intended to test the factors' association with climate and to verify the apparent disassociation of climate factors from marks, three criteria were used to choose the factors. The factor had to comprise three or more items. Three or more of the items had to be associated with climate (rating) and thirdly, two or more items had to be associated with achievement (marks). The factors remaining from the original sixteen in Table 6 were: number 1 - student confidence in the school; number 3 - staff concerned, fair, approachable; number 4 - cooperative, harmonious atmosphere; and number 5 - teacher press. Factor scores were generated for these four factors and a correlational matrix was developed showing the relationship of each factor to marks and to overall rating. The result is shown in Table 8 below. The polarities of the rating and marks coefficients had to be reversed because of an incongruity between the questionnaire items and the two variables. The items were scored with "1" being strongly disagree and "4" being strongly agree while the marks and school rating were scored with "1" being most positive ("A" mark and "Excellent" rating) and "6" being most negative ("F" marks and "Very Poor" rating).

Table 8

	F1	F3	F4	F5	MARKS	Overall Rating C15
F1	1.00	.49	.39	.23	.13	.43
P=	-	(.000)	(.000)	(.000)	(.010)	(.000)
F3	.49	1.00	.41	.29	.28	.35
P=	(.000)	-	(.000)	(.000)	(.000)	(.000)
F4	.39	.41	1.00	.21	.13	.34
P=	(.000)	(.000)	-	(.000)	(.009)	(.000)
F5	.23	.29	.21	1.00	-.14	.29
P=	(.000)	(.000)	(.000)	-	(.004)	(.000)
Marks	.13	.28	.13	-.14	1.00	.07
P=	(.010)	(.000)	(.009)	(.004)	-	(.103)
Overall Rating C15	.43	.35	.34	.29	.07	1.00
P=	(.000)	(.000)	(.000)	(.000)	(.103)	-

(Note: questionnaire formats were adjusted to ensure that positive correlations show positive associations.)

It can be seen in Table 8 that none of the factor associations with either climate or achievement are by chance. All four factors are associated with climate but only factor 3 has any strength of association with the student reported marks. The insignificant association of overall rating with marks was also confirmed by the correlational matrix.

In conclusion, Table 8 demonstrates the validity of the four factors as indicators of school climate.

E. Summary

The literature on school climate leads one to realize very soon that we need to differentiate between conducive climate in

elementary schools and conducive climate in secondary schools. The importance of strong leadership becomes greatly devalued at the secondary level at least in terms of instructional leadership and authority of expertise.

The greatest change as the educational level progresses to the secondary level is in the needs and attitudes of the students. Secondary students want more individualized attention --to know they are viewed as individuals whose efforts yield results--and yet they need to know the acceptance of their achievement aspirations by the peer group they tend to be inseparable from. They often reject (in their search for independence) and yet respond well to parental intervention and home support of school goals. Student ability, for the first time, becomes an intervening variable as the level of abstraction (and thereby difficulty) increases in courses such as Mathematics and Physics. In short, as the level of schooling increases the need for personal motivation and accountability increases.

A list of possible factors to be tested at the secondary level emerges both from the list of elementary factors and in contrast to the elementary list. Those proposed and tested by this writer include: a consistent emphasis on school goals; high expectations; conducive atmosphere; staff press for productivity; staff approachability (student-staff relationships); peer influence on achievement; student sense of efficacy and personal motivation; and parental press for achievement.

A Varimax Rotated factor analysis of the questionnaire responses resulted in sixteen potential factors (Table 6) which

have been numbered and labelled in abbreviated form as: 1) student confidence in school; 2) parental press; 3) staff approachability; 4) harmonious atmosphere; 5) teacher press; 6) student motivation; 7) peer acceptance; 8) school openness to parents; 9) friendship opportunities; 10) pleasant, accessible facilities; 11) student purposiveness; 12) teacher affectiveness; 13) institutional order and achievement emulation; 14) consistency of course content; 15) fairness of marking and 16) academic prioritization.

A dichotomous variable response is revealed for the first time as a result of Chi-square cross-tabulating each question in the questionnaire against the students' marks and their overall rating of the school. The students seem to differentiate between the institution as an evaluator of achievement and the institution as a place they occupy. Some factors are significantly associated with one but not the other while a few seem significantly associated with both. At this point it must be recognized that the author sensed the possibility of inadequacy in the questionnaire. The percent of variance accounted for by the factor analysis was very low and many of the factors were poorly perceived. A lack of appropriate wording or insufficient numbers of questions addressing each factor may have resulted in the elimination of a number of potentially valid factors from further examination. The following factors are identified in this category but will not be discussed until chapter 5: factor 6-- student motivation; factor 7--peer acceptance; factor 8 (for predicting rating only)--school

openness to parents; factor 9-- friendship opportunities; factor 10--pleasant, accessible facilities; factor 12--teacher affectiveness and factor 15 (for marks only)--fairness of marking.

The final outcome of the cross-tabulations (after a rigorous elimination process) is the yielding of four factors whose individual question elements seem to indicate a significant level of association with both achievement and climate. The four and their corresponding numbers from the factor analysis are: 1) student confidence in the school; 3) staff approachability / concern for student welfare; 4) cooperative / harmonious atmosphere among students and between student and staff and 5) teacher press for productivity.

The Pearson Correlational Matrix developed from the factor scores confirmed the high significance levels of each of the four factors in association with climate (overall rating), but no strength of association with achievement. The lack of association between student-reported marks and rating of the school was first noted in the cross tabulations and confirmed in the correlational matrix. That there are many inadequacies in the analysis process and shortcomings of the sampling tool is readily recognized by the writer. The next chapter will address these faults as well as some potential directions for further research.

Chapter 5

The results of the student survey questionnaire have proven some of the original hypothesis, failed to prove others and revealed some unexpected possibilities. Some of the failures may be due to inadequacies in the study design or administration and these possibilities need to be explored at this point.

A. Study Limitations

A small but confusing design problem in the questionnaire necessitated the reversal of some of the signs in Table 8. A modified version of the questionnaire would need to ensure that the profile questions, individual item responses and overall rating (C15) were all scored in the same direction. A positive correlation between any specific item and C15 would mean that those who strongly agree with the statement also rate the school very highly.

A more major problem is revealed in the percent of variance accounted for by the factors in the factor analysis. It can be seen that the questionnaire does not identify many of the factors that are included in the subject school's climate. Almost 58% of the variance is unaccounted for. The problem may be the result of a lack of secondary school research from which to propose critical factors as proposed in "Shortcoming of this Project" (p.10). Another possibility is that while the factors cited by the research are comprehensive, the individual items on the questionnaire were not discrete enough or in sufficient numbers to identify all of the factors. In the final four factors tested in the correlational matrix, two had only four items

significantly relating the factor to the rating of the school and there are a number of items which loaded on more than one factor. This shows a weakness in the questionnaire design.

The last limitation to be discussed here is the lack of association between the student-reported marks and their overall rating of the school. This result undermines the main hypothesis of the project--that climate and achievement were strongly associated in secondary schools as found in the elementary studies and reported in the available secondary studies.

It must be explained that student-reported marks were intended to be a measure of achievement and herein lies the problem. It was recognized by the writer that senior secondary students do not have a common ground on which to assign achievement scores such as reading level used by elementary school researchers. It is also recognized that, in line with Firestone and Herriott's (1982) conclusion, secondary school students have very divergent goals and measures of success. Some evaluations are based on written assignments while other students are evaluated in terms of their ability to demonstrate manual skills such as in the clerical and industrial fields. Using marks as the achievement variable places a great reliance on the objectivity and consistency of the marking done by the teachers. This lack of an objective measure of achievement, coupled with the questionable validity of student-reported success may account for many of the association weakness--both with marks and overall rating and also marks and individual factors. It's noted that very few students reported failing marks (2.6%) although many

more fail than the number who perceive this state. This disparity underlines the lack of credibility of at least some of the reported marks. Perhaps instead of surveying the students in late winter, (March) it would be better to administer the questionnaire in late fall (November) and have them report their previous years average mark. Implications addressing this result will be discussed in the next sub-heading.

B. Implications from the Results

There is an overlap between this sub-heading and the one dealing with "Directions for Future Research" since most of the results will need further research to varify sometimes alternative implications.

Four major implications emerge from the results of the project all of which will require more refined research. First, as proposed in the study's purpose (pg.8) there seems to be an identifiable climate or "ethos" in the subject school, only part of which has been accounted for by the questionnaire. Secondly, though the factors resulting from the questionnaire analysis were not a strong demonstration of the ability of secondary students to identify climate factors, it is more likely an indication that the actual tool and not the method, is the weakness. Thirdly, the climate-achievement relationship negated the possibility of climate factors relating strongly to achievement. This could be a problem of inadequate questionnaire items to measure climate and an unreliable achievement variable. Alternatively the lack of association could be showing that at the secondary school level there is no association between

student achievement and the school climate. Achievement and climate in secondary Schools may be independent variables unrelated to each other. The last implication to be stated but not dwelt upon is that even if the climate-achievement association is found to be critical, climate change prescriptions for improved achievement are a thing of the distant future.

That the composition of the climate variable is incomplete cannot be argued but a look at the nature of the climate factors remaining seems to make sense, apart from their statistical weakness. Factor 1, "student confidence in the school to educate", implies that the school is equipped and the teachers are able, willing and actively helping students to achieve. It seems logical that this is the type of environment a person would feel drawn to--if their aim is to achieve. The factor association with overall rating had a correlation level of .43. Factor 3, "staff concerned, fair, approachable", scored second highest (.35) in association with the overall rating. The factor includes measures of teacher cooperation, openness and affective effort. This also, appeals on an emotional basis, as a healthy, inviting environment in which to attempt to learn. The third factor (number 4 in Table 7), "harmonious atmosphere", largely measures the safeness (item A16, A25) and amicability of the school environment while the last (number 5 in Table 7) "teacher press" is a measure of teacher-initiated encouragement. All four factors seem reasonable and desirable as components of any school "ethos" and yet they comprise a very narrow perspective of a school's climate. A practitioner in secondary education would

readily recognize the insufficiency of these factors in describing a good secondary climate. There are no strong measures of camaraderie nor of school goal emphasis nor of teacher expectations all of which were implied by the secondary studies. These and other factors cited in the literature (Table 3) but unidentified statistically by the questionnaire are alluded to by some of the "significantly related but unclustered" individual items listed in Appendix B. Without trying to undermine the need for statistically backed, repeatable results, I believe there is still a case to be made for the existence of secondary climate based on the four final factors and the unclustered but significantly related individual items (Appendix B). Again, the weakness is likely due to the pioneering nature of this initial investigation and the crudeness of its testing tools. This implication will be further addressed in a direction for future research.

The climate-achievement relationship also implies the need for continued, finer-tuned research. As stated above, two possibilities emerge--the variables need to be improved (their composition and measurement) or the Effective Schools findings were not applicable in the subject school.

Improving the climate variable may be a matter of addressing the proposed factors with more items and better-focussed items. The items will need to address all the proposed factors from the literature and yet be distinguishable from the elements of the other factors. The percent of variance must be increased to make the climate variable credible.

Improving the achievement variable may be more difficult. The use of a standardized achievement test would be ideal but possibly impractical at the secondary school level. Since students start being streamed into different Math courses as early as Grade 8 and English a couple of years later, it is impractical to use tests from these two areas at present. One possibility would be to develop a test composed of core material, common to all stream within a subject area and to use a school-level result such as an average mark. Another possibility would be to give grade-level tests in each stream and in each department of the secondary schools and again, develop a school-level achievement score composed of all the department scores. This school-level score could be used as the achievement variable or as the basis from which each student would be assigned an achievement score. Provincial exams may prove to be the answer to assigning an achievement score but only if all those students responding to the questionnaire write provincial exams. Without some form of district-wide or province-wide test, the achievement variable will continue to be a cause of weakness in the research.

The alternative implication regarding the achievement-climate relationship is that School Effectiveness findings may not be generalizable in senior secondary schools. If, as the research continues, the association between climate and achievement does not become statistically significant, this alternative will have to be accepted. It is conceivable that senior secondary student achievement is unrelated to the school climate. It is possible that in schools where students achieve

well above average, the cause may be related to something apart from the school climate. Perhaps personal incentive or the assurance of employment or increased influence of the home environment becomes more influential.

It has been pointed out that while some of the items and factors from the questionnaire were reliably perceived by the students, they were only related to one of the variables--either marks or overall rating. It may be true that, while some climate items have an influence on student achievement there may be many more items which affect either marks or climate independently. Table 9 below, lists the factors and items from Table 7 under the heading of whichever variable they were significantly related to:

Table 9

Significant-for:	Rating-Only	Mark-Only	Both
Q	F1 - B3	F5 - A29	F1 - A3
U	5	F6 - C12	B4
E	F2 - C8	F11- A30	6
S	F3 & F12 - A11	F13- A22	7
T	F4 - A15	F15- A7	F3 - A1
I	16		8
O	F5 - A21		12
N	C2		F4 -A14
S	C4		17
	F8 - A6		25
	C1		F5 - C3
	F10 - B2		F6 -C13
			F7 -C10
			F9 -A17
			F10 - B1
			F12 -A12

The strong inference in Table 9 is that school is seen by students from two distinct perceptions depending on whether the student is evaluating the climate or the school's grading procedures. It seems entirely possible, that there are a

significant number of students who achieve well at school but don't like the institution and also students who like school but don't do very well. It is possible that, because of some very negative home situations, students may see school as a positive place--a place to meet friends, a place with comforting structure and accepting people--and yet these same students may, because of the same home situations, not see high marks as a priority in life. It can be argued by this writer that there are without question, students in the subject school for whom food, shelter, clothing and acceptance are not given but priorities which displace achievement goals.

Two observations which give credibility to the goal-displacement speculation describe this school as very unique. There seemed (during the tenure of the writer) to be home crisis situations being shared by students and borne by peers and teachers on an unusually frequent basis. Cases of physical and sexual abuse, family deaths or separations were being shared and cried-over in the school hallways, classrooms and offices perhaps as frequently as bi-weekly.

The second observation involved the reluctance of students to go home. It is common for children to gather with friends on an informal or extra curricular basis in most school. In the subject school however, it was not unusual to see children, alone, late on Fridays and on the last day before holidays--children with nobody to go home to (often because the single parent was working) or, in some cases, no home to go to.

The type of personal trauma cited touch many people even

in a large school and have a tendency to relegate school achievement concerns to lower than top priority.

If this independent variable implication is indeed a function of socio-economic class or place-specific circumstances, it would not be duplicated in other schools which enjoy more stable family situations. This last possibility leads to a number of proposed future research directions.

C. Future Research Directions

Since the concept of linking secondary school achievement with student-perceived school climate is new, and the tools are crude, many of the results of this project are tentative. Research is needed to confirm or refute the findings or perhaps to determine in which specific circumstances they become valid. Three of the suggested research directions involve addressing weaknesses and limitations of this study. The remaining one is a caution to be aware of a possible new direction in the study of secondary school achievement improvement.

A primary concern of further research must be to better establish the precise factors of secondary school climates. Since 58% of the variance of the school climate was unaccounted for by the factor analysis, two directions emerge. A different analysis technique may be determined to better show what the students see as fundamental to their school's climate. Secondly, new or better focussed factors need to be defined. As stated in the "Implications" section of this chapter, a reassessment of more current research (since 1982) may yield new potential factors. Another source may be to look more closely at the

factors resulting from this project and also the "unclustered but reliably perceived" individual items outlined in Table 7 and Appendix B. It is possible that re-wording and supplementing some of the factors and individual items may clarify, in the students' minds, the climate components suggested in the literature (Table 5). Factors 7 and 10 seem most deserving of further consideration since both seem, from a practitioner's perspective, to be critical. The need for adequate facilities and resources (factor 10) and peer-acceptance of one's achievement aspirations (factor 7) seem fundamental to a healthy, conducive climate in which a student would want to do well. The second direction for research involves the improvement or at least validation of the achievement variable. The unreliability of using student-reported marks, especially when there is no common core nor compulsory internal consistency regulating their assignment, has been dealt with previously. Standardized tests seem to be the solution for making the achievement variable credible. Whether a province-wide or district-wide test of a common subject (such as English 11) or whether a test in various departments (such as Science, Math and Social Studies) is warranted, must be decided by another researcher. Consideration must be given, however, to the remaining probability that because of streaming in the high schools, it may be impossible to find any content or skill that is common to all students in the province, at the senior levels. The third research direction is to broaden the sampling of schools to better determine if climate and achievement variables are place-specific or if they are

generalizable. A suggestion has been made in this chapter that the nature of home problems in the subject school and their manifestation in the school may undermine the attempts of the school to make high achievement the school priority. Broader-based research will illuminate this possibility and either confirm or deny it. Climate-achievement testing should include schools with high academic orientations as well as vocational orientations, high and low socio-economic communities and schools from isolated communities as well as urban centres. Testing should involve large and small population schools, those divided into junior and senior high grades as well as combined (junior and senior together) and it should sample schools with various forms of school level governance. Only as testing includes a good sample of the types of schools available to our students, will educators be able to determine if and how specific factors group to form a "critical mass" (Austin, 1979) of positive influences that will make the difference in improving school-wide secondary student achievement.

The last direction, to be suggested here, is a caution to be watchful for the repetition of the "independent variable" finding proposed in the "Implications" section of this chapter. As the base of knowledge is broadened it may become apparent that only in certain circumstances will achievement be associated with climate factors. It is possible that in a small rural school, where the school-wide focus is on high achievement in academic courses, the achievement levels may be directly related to certain climate elements. It may be, conversely, that in large,

urban schools where a broad range of academic and vocational options causes goal divergence and differentiated achievement requirements, there is no relationship between the achievement levels and any of the elements of climate. These potential findings will only be possible once a larger picture of secondary school circumstances is brought into focus.

D. Conclusions

This project has added to the body of knowledge which may, one day, produce prescriptions by which alterable, within-school processes and circumstances will be changed to yield higher, school-wide student achievement. Despite limitations and weaknesses of design and analysis some of the purposes of the study (pg.8) have been realized.

The four factors which resulted from the factor analysis and cross-tabulation tests were shown to be associated to the overall rating of the school. Thus, an identifiable climate was shown to exist at the senior secondary level and the factors were yield from the student survey questionnaire. It is recognized that the low percent of variance accounted for condemns the questionnaire as crude and inadequate for further research. The third "Purpose of the Study"--to show specific climate factors as critical to student achievement--was not realized. The lack of a comprehensive list of climate factors and the unreliability of using student-reported marks (as the achievement variable) may have undermined the ability of this project to show the association of achievement and climate that is reported in the Effective Schools literature. An alternative implication raised

by the findings proposes that the climate--achievement association may either be totally invalid at the senior secondary level or may be reliant on specific other circumstances which the "Future Research Directions" has proposed.

The worth of this project lies in the groundwork it has commenced for further research into secondary school climate and achievement. The results, limitations and implications combined to give a clearer understanding of the problems peculiar to research at the secondary level (especially regarding achievement definition) and to give clear direction and rationale for further research.

As recognized early by the writer (Importance of the Study, pg. 9), because of the pioneering nature of this project, it cannot hope to act as more than a guide post establishing some groundwork and directing and motivating further research.

Appendix A
Questionnaire As Tested

Dear Student / Parent,

This questionnaire is part of a pilot study to determine how a school's climate (including staff/student attitudes and the adequacy of facilities) might be measured. Research in Great Britain and United States has shown that the school climate is an important factor in encouraging students to learn. Being able to measure school climate should help educators to create the type of climate in which students can learn best. Your anonymous responses to this questionnaire will be used to determine how well a school's climate can be measured by this student survey method. Your assistance is vitally important. Please complete the questionnaire as accurately as possible.

In order to be used, your completed responses must be accompanied by this authorization sheet with your parent / guardian's signature on the appropriate line below.

To ensure your anonymity remove the authorization sheet from the questionnaire and hand it in to your teacher separately. The questionnaire may be returned in the blank envelope you received it in. Your teacher will check your name off as you return the two separate pieces to encourage as many completed questionnaires as possible. The questionnaires will be destroyed at Simon Fraser University after the information has been transferred to cards for computer processing.

If there are individual questions which you are unsure of or which you prefer not to answer, please leave the response space blank. Your participation and prompt return of the survey is essential to the usefulness of the project. Authority to use the information must be shown by your parent/guardian's signature since it is required by Simon Fraser University.

Thank you for your cooperation.

Yours sincerely,

Brian W. Wright
Tupper Teaching Staff
Simon Fraser University
Faculty of Education

Parent/Guardian Signature

STATISTICAL PROFILE
 =====

To Answer: Place the number of the most appropriate answer in the space beside the question in the right hand margin.

1. Student's grade: -----
 1. Eleven 2. Twelve 4
2. Sex: -----
 1. Male 2. Female 5
3. What are your average marks? -----
 1. A 4. C 6
 2. B 5. C-
 3. C+ 6. Failing
4. What are your plans after high school? -----
 1. I have a specific job in mind. 7
 2. I plan to continue my education.
 3. I am not sure.
5. What is the highest formal education level attained by either of your parents? -----
 1. Elementary school 5. Completed university degree
 2. Some secondary 6. Some graduate study
 3. Completed secondary 7. Other-please specify:
 4. Some post-secondary -----

To Answer: Please read each statement below and place the number of the most appropriate response (see below) in the right hand margin.

- Responses: 1. Strongly Disagree 3. Agree
 2. Disagree 4. Strongly Agree

Dimension A. - School Environment - Conducive Atmosphere
=====

- 1. Staff in this school try to resolve student concerns. ----- 9
- 2. Our school provides plenty of activities (e.g. drama, music, sports etc.) other than just schoolwork for students. ----- 10
- 3. Teachers give extra help to students who are doing poorly. ----- 11
- 4. My parents feel free to contact the school about my schoolwork. ----- 12
- 5. Our school encourages parents to visit or phone at any time during the regular day. ----- 13
- 6. My parents feel welcome to visit my school. ----- 14
- 7. In this school, marks are based on how well a student does on tests and assignments. ----- 15
- 8. Marks are given in a fair manner in this school. ----- 16
- 9. Good effort results in good marks in each class. ----- 17
- 10. I feel I am treated as an individual in this school. ----- 18
- 11. Students and teachers work together to help students do well. ----- 19
- 12. My teachers are usually open and understanding. ----- 20
- 13. There are teachers in this school to whom I could go with personal problems. ----- 21
- 14. Most students are agreeable to the requirements of teachers in this school. ----- 22
- 15. Students generally respect one another in this school. ----- 23
- 16. In this school, there are very few conflicts among students. ----- 24
- 17. This school provides good opportunities to make friends. ----- 25
- 18. The thing I like most about this school is being with my friends. ----- 26

Responses: 1. Strongly Disagree 3. Agree
 2. Disagree 4. Strongly Agree

- 19. I have friends in this school who help when I have problems. ----- 27
- 20. In this school, academic achievements are more important than other activities such as athletics, drama, etc. ----- 28
- 21. Students are reminded regularly about school goals and course objectives by the teachers and administration. ----- 29
- 22. We often see or hear examples of academic excellence in this school via school showcases, the P.A. system or at assemblies. ----- 30
- 23. In general our school is kept clean and orderly inside and out. ----- 31
- 24. Teachers and administrators ensure that the students in the hallways are not disruptive during and between classes. ----- 32
- 25. Discipline in this school is handled in a fair and just manner. ----- 33
- 26. Our class time is rarely disrupted by official distractors(e.g. P.A. announcements, phone calls, etc.) ----- 34
- 27. Most students in this school try to do well. ----- 35
- 28. Students pay close attention to instruction in my classes. ----- 36
- 29. Very little class time is taken up by the teacher to discipline students. ----- 37
- 30. In this school, we get a lot of work done in class. ----- 38

Dimension B. Adequate Facilities, Programs, Personnel.
 =====

- 1. Our school is a comfortable, pleasant place to work. ----- 39
- 2. There are plenty of quiet places at school where I can do my schoolwork. ----- 40
- 3. There is no shortage in this school of reference material or facilities for my schoolwork. ----- 41
- 4. My teachers are teaching the courses they are trained to teach. ----- 42
- 5. My teachers can help when I have trouble with schoolwork. ----- 43

Responses: 1. Strongly disagree 3. Agree
 2. Disagree 4. Strongly Agree

- 6. I have competent teachers instructing me. ----- 44
- 7. This school offers the necessary courses to prepare me ----- 45
 for future work or further education.
- 8. In this school, the material covered in a course is the ----- 46
 same no matter which teacher you get for that course.

Dimension C. Academic Press

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- 1. Teachers expect everyone to do their best work in this ----- 47
 school.
- 2. My teachers usually check to ensure the homework they ----- 48
 assign is done.
- 3. My teachers regularly let me know how I am doing. ----- 49
- 4. Teachers in this school encourage students to do better ----- 50
 in their school work.
- 5. My parents often ask how I am doing at school. ----- 51
- 6. My parents feel school is very important for me. ----- 52
- 7. My parents encourage me to do well in school. ----- 53
- 8. My parents are upset when I don't do well in school. ----- 54
- 9. In this school, most students do some homework each ----- 55
 night.
- 10. My friends try to perform wells at school. ----- 56
- 11. My friends would think it is great if I do well in ----- 57
 school.
- 12. I believe the better I do in school, the better prepared ----- 58
 I will be for my future.
- 13. I am trying to do the best I can at school. ----- 59
- 14. I believe I am capable of doing well in school if I try. ----- 60
- 15. Overall I would rate the climate in this school (in ----- 61
 terms of general attitudes, atmosphere, student/staff
 effort and physical facilities) as:

- 1. Excellent 4. Adequate
- 2. Very Good 5. Poor
- 3. Good 6. Very Poor

Appendix B
Validated Questions

Factor/Question Number			Question Significance Rating / Marks		Mean Score
F1	A3	Teachers give extra help to students doing poorly	+	+	2.62
	B3	No shortage of materials or facilities	+		2.99
	4	Teachers are teaching their area of expertise	+	+	2.85
	5	Teachers are capable of helping students with school problems	+		2.92
	6	Teachers are competent	+	+	2.75
	7	Courses necessary for my future are available	+	+	2.98
	F2	C8	Parents are upset when students don't do well	+	
F3	A1	Staff try to resolve student concerns	+	+	2.65
	8	Marks are given in a fair manner	+	+	2.48
	11	Students and teachers work together to help students do well	+		2.55
	12	Teachers are usually open and understanding	+	+	2.58
F4	A14	Most students agreeable to teacher requests	+	+	2.66
	15	Student-student respect	+		2.51
	16	Very few student-student conflicts	+		2.36
	17	Good opportunities to make friends	+	+	2.95
	25	Discipline handled fairly	+	+	2.80
F5	A21	Students frequently reminded of school goals/objectives	+		2.78
	29	Discipline takes little teacher time		+	2.79
	C2	Homework checked by teachers	+		2.58
	4	Teachers encourage students to do better	+	+	2.77
F6	C12	Students belief that school succeed will help prepare for future	+	+	3.25
	13	Students trying to do his/her best	+	+	3.07
F7	C10	Friends trying to do well	+	+	2.94
	11	Friends supportive of students high achievement	+	+	2.96
F8	A6	Parents feel welcome at school	+		2.74
	C1	Teachers expect everyone to do their best	+		3.01
F9	A17	Good friendship opportunities at school	+	+	2.95
F10	B1	School is a comfortable, pleasant place to work	+	+	2.78
	2	Plenty of quiet places to work at school	+		2.39
	3	No shortage at school of reference material and good facilities	+		2.59
F11	A30	Class time is very productive		+	2.50
F12	A11	Students and teachers work together to help students do well	+		2.55
	12	Teachers usually open and understanding	+	+	2.58
F13	A22	Students often see/hear examples of academic excellence		+	2.84
F15	A7	Marks are given objectively (from tests and assignments)		+	2.97

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