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ABSTRACT

Reanalysis of past research on student outcomes and adjustment illustrates that school effects do exist. One of those influential school effects is school climate. A survey of teachers and students at eight Swedish junior high schools sought to measure the effects of teaching and social climate on student achievement, behavior, and social and personal adjustment. Teachers were questioned about their teaching situations, students' environment, school leadership, and other factors. The results showed a significant correlation between school climate and both student achievement and behavior. Even if correlations existed in the study between student social background and both the climate variable and dependent variable, this was not sufficient to explain the school climate and student achievement correlations found. The results supported the position that student outcomes in schools with a good teaching and social climate are relatively better than or comparable to the student outcomes in schools with better social compositions but poorer climates. A significant correlation was not found between climate and students' norms and academic self-reliance. Teachers' and students' assessments of school climate were very similar. Appendices 1-5 include sample questionnaires. (Contains 72 references.) (JPT)

SCHOOL CLIMATE, ACHIEVEMENT AND BEHAVIOR IN EIGHT SWEDISH JUNIOR HIGH SCHOOLS

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June 1991

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CONTENT

School Climate, Achievement and Behavior in Eight Swedish Junior High Schools. Lennart Grosin, Department of Education Stockholm University, June 1991.

Abstract: The work done on developing and testing a teacher questionnaire to measure pedagogical and social climate in junior high schools is presented. The theoretical and empirical bases for the study as well as the practical and economic motives for using the approach are described and the questionnaire is presented in its entirety. Reliability was tested through item analysis. A test was made of validity by ascertaining the rank correlation between the climate variable and the response frequency of the teachers. Indirect test was also made of validity by calculating rank correlations between the climate variable on the one hand and the student achievement and behavior variables on the other, as well as by examining the degree of correspondence between judgements of school climate made by teachers and students respectively. Positiv and in some cases significant correlations were found even after controlling for the students' social background for which reason the validity of the questionnaire is considered to be quite satisfactory. The results agree in the main with those obtained from studies on school climate and successful schools undertaken in other countries.

SCHOOL CLIMATE, ACHIEVEMENT AND BEHAVIOR IN EIGHT SWEDISH JUNIOR HIGH SCHOOLS

1. Background and aims

Research on successful schools is concerned with two main questions: Are there any differences between schools with respect to student outcome and adjustment, after controlling for student background and external factors pertaining to the schools? And, if so, how can such differences be explained? Coleman (1966) and Jencks et al. (1972) found practically no school effects. However, a re-analysis of their data showed substantial school effects (Wahlberg & Rasher, 1974 and 1977, Edmonds & Fredriksen 1979, Stedman 1985), as did also later studies in which more developed research methods were used. One of the factors which has been found to contribute to school effects is school climate. An explanation for this finding relates differences in school climate to the attitudes and behavior of teachers and head teachers (Rutter et al. 1979, Brookover et al. 1979, Mortimore et al. 1988. See also Grosin 1985a, 1989a och 1989b).

Various methods have been used for studying school climate. These include:

* qualitative methods such as interviews and observations
* the use of observations, interviews and questionnaires to study a wide range of operationally defined variables
* measurement instruments such as questionnaires given to teachers, school principals and students.

In some of the studies, several different methods were employed concurrently. An advantage to using measurement instruments is that they are much less costly and time consuming than other methods. A more important consideration is that measurement instruments are also more precise and provide a better basis for comparison.

The main aim of this study is to construct and test measurement instruments in the form of questionnaires directed to teachers and students for the purpose of measuring the pedagogical and social climate of schools. This paper is mainly concerned with the teacher questionnaire, although results obtained with the student questionnaire is also used.

We have also used the teacher instrument in a preliminary investigation of the correlation between school climate on the one hand and student achievement, behavior and social and personal adjustment on the other.

The factors and items which make up the questionnaires were selected on the basis of results obtained from international research on school effects as well as from a case study of four junior high schools in the Stockholm area (Grosin 1985a, 1989a).

The statistical calculations in the study were carried out by Carl Westman, B.Sc. This paper has also been presented at seminars held at the Departments of Education and Sociology at Stockholm University. Åke W. Edfeldt, Carl-Gunnar Jansson, Lars Lindström and Charlotte Lundberg have read earlier versions of the paper and given much valuable advice.

2. Theoretical and methodological aspects

Brookover et al. (1979) have given a good presentation of the theoretical basis for the research on school effects and successful schools:

> "In brief, the theory that guides this research holds that the behavior learned by students will vary between schools and that this variance between schools can be explained by characteristics of the school social system. First the nature and characteristics of the students, teachers and other members of the system which are identified as inputs may affect the student outcomes. These inputs, however, are modified in the process of interaction which are structured by some characteristics of the school social structure and by the social-psychological norms, expectations and feelings which characterize the patterns of interaction within the system. The school social structure and the subculture or climate of the school are thus perceived as intervening variables between the input and outcome variables."

The research designs used in research on school effects and successful schools up to now have been mainly of two types: large surveys in which the data compiled is mostly quantitative and where many of the aspects of the inner life of schools are defined and measured operationally; case studies in which the climate and characteristics of individual schools which have better than average student achievement and behavior but comparable input are described.

The term "success" is defined by the independent variables used. *Student achievement*, for example, has been measured by *means of grades, examination results and scores on school tests*. Mortimore et al. (1988) in their study of junior schools in London, in addition to the more traditional measures of student achievement, included such variables as ability in *practical math, creative writing and oral presentation. Social and individual adjustment* has been measured using variables such as *absence from school, behavior, self-esteem, self-confidence, attitudes towards school and delinquency.*

Galloway (1983, 1985a, 1985b), Rutter et.al. (1979), Rutter (1983), Gottfredson (1987) och Graham (1988) show that school can have a differntiating effect on student learning difficulties and social adjustment in and outside school even after control of background factors.

In the above mentioned study by Mortimore et al., the influence of the teacher's pedagogical views, qualifications and methods on student outcome was also investigated.

Studies of the relationship between background variables and student outcome that have been undertaken for a random sample of schools show that only a few schools are successful in the sense that student outcome is appreciably higher than is generally found in schools having a comparable social mix. In the study by Mortimore et al. (1988a), for example, about a third of the schools were considered to be successful in that respect. In Willms' study (1986) on secondary schools in Scotland, an even smaller proportion of schools differed in this respect from the majority of schools having a comparable social mix. It would appear, then, that according to the between school difference, most schools tend to reproduce the social differences which exist in society.

In other words, the interesting conclusion that can be drawn from the research on successful schools is that there are exceptions to the rule. Lower-class students attending a really successful school may excell over upper-class students who have had the bad luck to attend an ineffective school. The same inverted relationship has been found concerning students who differ with respect to two other fundamental background factors, i.e. previous knowledge and aptitude for schoolwork (Mortimore et al. 1988).

A question that has been under discussion is whether some groups of pupils in successful schools benefit more than others and, particularly, if successful schools are able to contribute to greater equality by weakening the correlation between pupils' social and educational background on the one hand and their school performance on the other. The problem has been treated by Edmonds (1979) who maintained that a reasonable definition of a successful school is that it enables the same proportion of working class pupils as middle class pupils to become eligible for admission to higher education. In Mortimore's study of the lower grades in elementary school, no such differences were found, not with respect to gender, social class or ethnic origin. Neither does Willms' (1986) study of upper secondary schools in Scotland show such differences in the more and the less successful schools. Wilson & Corcoran (1988) determined that the lack of equality was one of the remaining problems in the more successful upper secondary schools in the USA. Mandeville & Kennedy (1991) found no internal correlation among the qualities which characterize successful schools and the correlation within schools between social background and school performance.

It would seem, in other words, that even the more successful schools reproduce among their pupils the class differences prevailing in society, if on a higher level. The qualities which characterize the more successful schools are not sufficient in themselves to reduce the spread among pupils (Grosin 1989c). In all probability, increased efforts are required, both to stimulate the development of the basic skills of the weaker pupils and their overall intellectual development (see p. 9) as well as to improve the curriculum of the home (see p. 44), especially for pupils from the working class and for immigrant groups.

Most of the research to date on successful schools and school climate has been describing specific characteristics of such schools. Thus, the theories and explanations as to why schools function as they do and what determines the climate of a school have been based mainly on descriptive data. An important task is therefore, on the basis of the descriptive data, to develop concepts and theories that will make it possible to

understand and explain the pedagogical and social climate of a school (Anderson 1985, Grosin 1989a). The work by Rutter et al. (1979) on theories of socialization is a case in point.

Other attempts that have been made so far to develop such a theoretical perspective is the work done by Weil et al. (1984), whose study of school-level factors pertaining to successful schools and more typical schools has shed light on some of the possible explanatory factors. Another is that of Sheerens & Creemers (1989) who examine the possibility of applying an organizational perspective in understanding how school climate is created.

The possible causal relationship between school climate and student outcome is being explored in a follow-up to the Rutter study in which changes in student outcome over a five-year period are being examined in relation to changes in school process and practice (Maugham et al. 1990 and Ouston et al. 1990).

The descriptive approach is however a fruitful one, in particular if one considers the current state of knowledge of the behavioral sciences. While both researchers and practitioners debate with each other on the theoretical plane how best to bring about good school praxis, there are already schools in existence today where students are learning more and achieving better adjustment. So why not attempt to describe these schools and try to understand what characterizes them?

At the same time, however, there are certain problems connected with this approach. For example, descriptive studies are often lacking in comprehensiveness and much more research is needed before exhaustive descriptions of successful schools and school climate will be forthcoming. Also, since school systems as well as the individual schools themselves are constantly undergoing change, there can be no one true description that is valid for all time.

For example, improved teaching conditions created by a better school climate are probably not the only prerequisite for a more successful praxis in school. Greater knowledge and further development of methods of teaching and leadership are also needed. Also, the fact that some schools can be characterized as successful does not necessarily mean that they represent "the best of all possible worlds", only that they represent the best possible world for the time being. Consequently, any definition of what constitutes good school climate must be treated as preliminary. A problem which

we have already touched upon concerns the lack of equality that exists even in the more successful schools (see above, p. 7). Wilson & Corcoran (1988) found that even the best upper secondary schools in the USA were lacking in pupil self-determination.

Although it is quite natural to look upon successful schools as models for improving the less successful schools, there is the risk that negative elements will be adopted along with the positive. Thus it is essential that the concepts used for describing the successful school be open to change and that they be based on continuous research into teaching methods, learning and developmental psychology. My approach is therefore a relativistic one where I talk about the **most** sucessful schools in comparison with others.

There are also a number of general methodological problems connected with research on school effects. One such problem is that it is difficult to study the effects of a single variable, in this case school climate, when it is only one of several mutually dependent and interactive variables.

Based on the criticism of earlier studies of school effects (Rutter et al. 1979) and on the early studies of successful schools (Tizard et al. 1980, Heath & Clifford 1980 and 1981, Maugham et al. 1980, Rutter 1983 and Goldstein 1984; see also Grosin 1985a and 1989a), the common view today is that investigations aimed at exploring the effects of different variables on the variance in student outcome should comprise:

* longitudinal data
* data collected on the individual level instead of on the school level
* analysis of variance and multilevel variance of data on background, class- and school level
* random sampling of schools
* several variables to control for background factors
* dependent variables that are sensitive to school practice, e.g. grades, examination results, attendance record, academic self-esteem, attitudes towards school and the way students cope with school
* broad investigation of the pedagogical and social school climate.

3. The school's pedagogical and social climate

The research to date indicates that the pedagogical and social climate of a school is a complex product of deeply felt values and norms held by school principals and teachers which manifest themselves through practical actions developed over a long period of time. Rutter et al. (1979) sum up this view nicely in their definition of school climate as *"Ethos: ...or set of values, attitudes and behaviors which will become characteristic*

time. Rutter et al. (1979) sum up this view nicely in their definition of school climate as *"Ethos: ...or set of values, attitudes and behaviors which will become characteristic of the school as a whole."* Purkey & Smith (1982) had already emphasized the concept of school culture in their critical review of research on successful schools. They developed this view further in a later article (1985).

Austin & Holowenzak (1985) used a communication model to describe the relationship between teachers and students. The pedagogical and social climate of a school is perceived as being a comprehensive message, and the thousand and one situations which comprise everyday life at school is the medium through which this message is communicated.

In the study by Rutter et al. (1979), a record was kept of the proportion of lessons which ended before full time. This was one of the two process items out of a total of 46 investigated which correlated significantly with three of the outcome measures (school attendance, achievement and behavior) and which also had a positive correlation with the fourth measure (delinquency). Of course, this result does not in itself indicate that there exists a causal connection between lessons ending prematurely and, for example, poor student achievement. A reasonable interpretation however is that by maintaining the inviolability of lesson time, the teacher communicates an important message to the students which is characteristic of the pedagogical and social climate of successful schools: the message that knowledge and teaching are of great importance, and that all students can gain by doing their schoolwork diligently. It is more the messages communicated rather than the concrete actions taken which explains these correlations.

The concept of social climate or structure (see page 5) as used by Brookover et al. (1979) is also among the more interesting ones from a theoretical point of view. It is an attempt to characterize the school as a cultural social-psychological entity and to uncover the values and mutual expectations that are characteristic of the principal, teachers and students.

The pedagogical and social climate of a school, then, is here defined as the expectations, values and norms concerning the aims, possibilities and restrictions of schooling and the school which are held by the principal, school leaders and teachers and which determine their conduct towards their colleagues and the students. The definition is

further developed in the following section and in the description and definition of the factors comprising the teacher questionnaire.

The study is based on the assumption that how students conduct themselves in terms of their social and personal adjustment, school attendance, achievement and behavior at school is determined to some extent by their awareness of the values and norms held by the principal and teachers and of the conduct that is a consequence of these values and norms.

By focusing on the values and action patterns of a school's leaders and teachers, attention is brought to bear first and foremost on the school's internal pedagogical and social qualities. The choice of definition is based on the assumption that it is possible for school leaders and teachers to create the kind of pedagogical and social climate that characterizes the more successful schools, i.e. schools where the pupils achieve good results and undergo favorable social development regardless of prevailing external conditions. This does not mean that external circumstances are considered to be without influence, only that they do not necessarily prevent school leaders and teachers from creating the good school. In practice, both the performance and social adjustment of the pupils as well as the pedagogical and social climate of a school are always the result of the interaction between external conditions and the internal pedagogical and social characteristics of the school.

Another closely related question is whether there are any differences in the pedagogical and social climate of schools having different social mix. Tedlie & Stringfield (1985) and Hallinger & Murphy (1986) have reported such differences with respect to the expectations of teachers and the actions of school principals. In successful low-status schools, the school principals were more directly involved in the efforts to achieve good pupil performance. For example, they visited the classrooms more often. The teachers' expectations of the pupils were more positive in all of the successful schools, but were of a more permanent, long-term nature in the high-status schools than in the low-status schools. The definition of school climate used in this report and the factors and statements which are included in the teacher questionnaire are broad enough to permit the analysis of any such differences. However, the number of schools in the study are too few for such a comparative analysis to be meaningful. The matter will have to wait for the new study just now being undertaken and comprising a larger number of schools.

4. Characteristic ways of action in successful schools

A common description of effective schools in the literature from the US is based on the so-called "six-factor model". developed by Edmonds (1979):

* strong, instructional leadership
* high teacher expectations
* emphasis on basic knowledge
* an orderly working climate
* time on task
* continuous evaluation of student outcome.

Stedman (1985) analyzed results from 17 investigations on successful junior and middle schools from the point of view of which strategies could have accounted for good school achievement. He points to some of the problems connected with the studies and to results which seem to contradict the "six-factor model".

Although the basis for Stedman's criticism of the components of the "six-factor model" is questionable in several respects, he was able to show, that the strategy used by many of the successful schools he studied was in fact based on a rigid curriculum focused on basics, teaching for tests and, in some cases, a negative attitude towards the students.

Other successful schools in the Stedman study had, on the other hand adopted a curriculum based on a considerably wider definition of knowledge which went beyond the teaching of basics and test results. The attention given in these schools to basics and evaluation seemed also to be part of a wider and more positive approach. Stedman listed the following factors:

* personal attention to students
* discipline as a by-product of school organization
* skillful utilization of teachers
* preventive teaching
* parental educational and political involvement
* student and teacher responsibility for school affairs
* ethnic and racial emphasis.

Mortimore et al. (1988), in analysing schools with good cognitive outcome, found that in some of the schools the students generally had high self-esteem and positive attitudes towards school, whereas in others the students generally had a less favorable personal and social adjustment to school.

Rutter et al. (1979) showed that harsh methods and corporal punishment were negatively correlated to outcome, that is, to achievement, behavior and school attendance, and were positively correlated to delinquency. Criminological research has uncovered the same tendencies (Graham 1988). More research is needed before any firm conclusions can be drawn, but an interesting question raised by the data is if the results of using harsh methods differ between the junior and secondary levels in school. For example, subjecting students to stress and drill might produce good achievement results at the junior level but fail with adolescent students at the secondary level.

Little is known as yet about tha curriculum in successful schools as compared with schools in general (Wilcox 1985.) Ramsay et al. (1983), in their study of successful schools in districts in New Zealand containing many students from minority groups, found that the successful schools, to a greater extent than comparable but less successful schools, adapted the curriculum to the students' sense of identity. The students were better enabled to identify with their school while retaining their self-esteem as part of a national minority. In the opinion of the researchers, from a sociological point of view these schools were in favor of a multi-cultural society in New Zealand. They also found that dropouts among the students in the non-successful schools were recruited into the youth gangs in the neighboring metropolitan area.

There is also rather little known about teaching methods in successful schools. Mortimore et al. (1988), however, found that in successful schools there was a more frequent use of both more structured and intellectually challenging approaches to teaching and flexibility concerning the use of different teaching methods. The study also supports the conclusion of Rutter et al. (1979) that student outcome is improved if teachers for a substantial part interact with and direct their teaching to the class as a whole.

Ramsden et al. (1989) presented results which constitute an important contribution to the description of the characteristics of the successful school. He and his colleagues studied the relationship in secondary schools between the students' perception of schoolwork and their manner of studying on the one hand, and student outcome on the other. Their points of departure were both the research on school climate and the research by Entwistle & Ramsden (1983) on learning techniques. The results indicate that there may very well be a systematic relationship between school climate and the tendency of students to use a more deeply interpretative way of learning.

Of course, much more research is needed before any firm conclusions can be drawn. But a plausible interpretation of the findings so far is that there may very well be a correlation between school climate and learning strategy, probably for the same reason that intellectual challenges were found by Mortimore et al. (1988) to be more frequent in successful schools than in less successful schools. In the former case, conditions such as better social control, improved social relationships and more time on task enabled teachers to raise the standard of instruction over and above the teaching of basics and reliance on repetitive methods. In all probability it is easier to be a good teacher in a successful school.

So far, research has been able to outline some of the characteristics and ways of acting that are typical of the more successful schools - schools in which good student outcome is due not only to frequent use of evaluations. These characteristics can be summarized as follows: an emphasis on instruction and learning; high expectations based on the view that all children are able to learn and that the ability to learn is contingent upon the quality of the teaching and leadership in the school and not primarily upon the children's social and ethnic origins; regular evaluation; encouragement and reinforcement of good work; structured lessons concentrating on few themes and individualization which takes into account the student's origins and abilities; a leadership style characterized by openness towards teacher values and preferences and which is both forceful and democratic and gives priority to teaching and learning; cooperation among teachers with respect to teaching goals and methods as well as to the socialization of the students; order and good working conditions as well as consequent but moderate sanctions for improper conduct; positive relationships between teacher and students based on mutual respect and trust; the teacher's role as a model and a person of authority.

On the basis of these results, there is reason to be critical of the tendency in school research to give undue emphasis to genetic and social background factors in explaining student outcome.

5. Methodological basis

In principle, whether or not it will ever be possible to describe or understand reality (in this case the climate of a school) unequivocally and comprehensively is a moot question. My claim here is only that one's view of reality is not necessarily wholly dependent on the observer. Descriptions of the climate of a school may be more or less

accurate and truthlike, resembling reality to a greater or lesser extent. Accordingly, the approach adopted in this study is neither objectivistic nor relativistic.[1]

The methodological point of departure of the present study is that it is possible to more or less adequately describe and understand the climate of a school and the relationship between climate on the one hand and student performance and the social and personal adjustment of the students on the other. School climate is regarded as being in itself one of the many independent factors influencing student performance, but it can also be dependent on and interact with other factors, as for example the "curriculum of the home", which means the extent to which parents support and take an interest in their children's schoolwork and overall situation at school (see below chap. ?). An intricate, but nevertheless, fruitful task is then to try to describe and understand what constitutes the climate of a school, how it has been created, what are its effects and what is its role in the interplay between input, school process and outcome. Unfortunately, it has not been possible in this first study to fulfill more than a few of the methodological ideals that have been developed within the research on school effects and school climate, referred to above (page 9). I lack, for example, longitudinal data and have data only on mean social background and student achievement. The sample of schools is not an ideal one and I have been able to control for only one background variable. I have however, as mentioned above, been able to use multivariate analysis for this control and school relevant variables, such as student grades and behavior as dependent variables. Finally, I have been able to put a good deal of effort into developing a thorough instrument to measure school climate which was the main aim of the study. Concerning the aim to describe, explain and understand the relationships between background, school climate and outcome in the Swedish school system, the present study is only a first step.

A basic assumption in the study is that teachers and students can be regarded as informants on their own school as to its values and actions and their responses to the statements in the questionnaires as valuable information about the pedagogical and social climate of their school. A test of this assumption is made (chap. 10.1).

[1] An analysis of the concept "truthlikeness" as contradictory to both an objectivistic and a relativistic point of view has been done by Johansson (1986).

6. The measuring instrument

Quite a few instruments for measuring school climate have been developed in connection with various research and school improvement projects undertaken in the US. One of the bases for the instrument described in this report is the questionnaire developed by the County Office of Education in San Diego (Watson et al. 1987). This instrument was based in turn on several earlier versions and has been thoroughly analysed statistically.

Another basis for the instrument is the questionnaire used in the School Assessment Survey (Wilson 1985) as well as questionnaires developed by Brookover et al. (1979) and Brookover & Slawski (1984).

The items are expressed as statements and the scale has four response alternatives: *Highly agree; Agree; Don't agree; Highly disagree There is also* a fifth alternative which, according to the instructions, is applicable when the teachers feel they *lack sufficient knowledge* to respond.

Most questionnaires of this kind which use a five-point scale include a "neutral" middle alternative. This can be motivated if, as in the case of Brookover & Slawski (1984), one uses "Neither agree nor disagree" as the middle alternative. It is doubtful, however, if the alternative used in the San Diego investigation, "Don't know", represents a true middle point. Admittedly, in a study on the pedagogical and social climate of schools, it can be of value to discover to what extent teachers lack adequate knowledge about their colleagues' attitudes and patterns of conduct. The desire to "force" the teachers to express their points of view as well as problems in formulating good alternatives in Swedish are two other reasons for omitting a neutral middle alternative.

According to the theory behind the use of this instrument, most of the statements are so formulated that agreement indicates a positive school climate. Some statements, however, were reversed because in some cases it is easier to express nuances in the negative. Another advantage to including both positively and negatively formulated statements is that it is easier to avoid routine behavior in answering. The negatively formulated statements are marked by an (*). Certain statements are relevant to more than one factor and are therefor repeted. The statements in the version presented to the teachers were given in random order.

There are mainly two kinds of statements. In the first instance, the teachers are asked to judge general tendencies in their school, in the second they are asked to characterize their own praxis. The questionnaire consists of 17 factors and 137 statements. Statements marked with (NR) were later excluded due to low reliability (see below chap. 8.2, page 28 and 10.2, page 33).

7. The teacher questionnaire

1. Expectations
2. Basic assumptions
3. Time on task
4. Teaching methods
5. Setting teaching goals
6. Teacher responsibility - teaching
7. Teacher self-confidence and sense of commitment
8. Teacher cooperation
9. Teacher openness for non academic contacts
10. Teacher responsibility and actions - behavior
11. Students' environment
12. Teacher's values and norms
13. School leadership
14. Teachers' environment and resources
15. Home and school
16. Staff agreement on values and school aims
17. Students' responsibility and initiative

1. Expectations

Much of the research on school climate and successful schools has indicated the importance of expectations for student achievement and adjustment to school life (see Grosin 1985a, 1985b, 1989a, 1989b). It appears that high expectations on the part of the teacher is an important contributing factor in creating a positive school climate. There is particular reason for dwelling on this question when considering the Swedish school system. The reforms which brought about the comprehensive school in the 1960's inevitably led to greater heterogenity in the classroom. To meet these changes, the national curriculum advised teachers to individualize their instruction; they were to adapt their teaching methods to the "needs and prerequisites" of the individual student. This view of teaching was deeply rooted in the thinking which characterized curriculum work at that time. However, individualized pedagogy entails the risk that teachers will lower their expectations in order to meet supposed limitations of their students.

Another problem that arises when considering the importance of teacher expectations for contributing to a positive school climate is the grading system so far adopted in the Swedish comprehensive school. The students receive formal grades only in the last two years of school. A relative, five-grade scale is applied which is based on the assumption of a normal distribution for the country as a whole. At present, the grading system stipulates that the middle grade is to be 3, and that the number of 1's and 5's respectively must not exceed the number of 2's and 4's respectively. Previously, there was also a specific percentage stipulated for each grade. This system, which was constructed

with the aim of providing a statistically just basis for selection to the different lines of study in high school, was intended to correspond to a hypothetical normal distribution on the national level. The experience from my research and the research of others is, however, that in practice the system is often incorrectly applied. In many cases it is the individual school which is used as the basis for the normal distribution of assigned grades, which consequently also affects grading in the individual schoolclass.

Even when the grading system is being used correctly, the mere assumption that there is a normal distribution is enough to influence some teachers to regard the fact that some students are assigned the lowest grade as a natural event and not as a pedagogical failure. What is said below concerning the way the relative grading system is used in practice (chap. 10.4.1., page 34f) implies, however, a modification of the problems connected with the system.

1.1. 90-95% of the students in the school are capable of acquiring the knowledge and skills for achieving grade 3 in the different subjects.

1.2. There is no good reason why any student should do so poorly in any subject so as to merit only a grade 1.(NR)

1.3. The teachers in this school are of the opinion that 95% of the students actually have sufficient ability to successfully complete a three-year theoretical course in high school.(NR)

1.4. Practically all students should be able to achieve good results in examinations and tests.

2. Basic assumptions

The factor Basic assumptions is closely related to the factor Expectations. What is of primary interest here is how teachers view their own possibilities and that of the school to influence the students' knowledge development and adjustment in relation to the influence which is exerted on the students by other people and environments outside of school. The teachers' view of the importance of "intelligence" for the students' outcome is probably also essential for the expectations they have of their students and faith in the school's and their own opportunities. These questions have been discussed by, amongst others, Rutter et al. (1979), Brookover et al. (1979), Edmonds (1979), Mc Cormack-Larkin (1985) and Mortimore et al. (1988). (See also Grosin 1985a, 1986, 1989a, 1989b).

2.1. More than anything else, it is the social and economic situation of the parents which determines the school achievements of the individual student. (*)(NR)

2.2. More than anything else, it is the quality of the school and of the teaching which determines student outcome, and not the social and economic situation of the parents nor the native intelligence of the individual.

2.3. If only we teachers could devote more time to helping the students who have difficulty in keeping up, the disparity among students with respect to performance would be greatly reduced.

2.4. Considering the conditions under which teachers today work, the outcome of schooling is about what could be expected.(*)

2.5. If only we teachers could devote more time to helping the students who have difficulty in keeping up, we would have almost no more students with "special needs".

3. Time on task

The time given to teaching a subject, or time on task, is an important indication of the extent to which successful schools emphasize knowledge and studies. In the context of school climate, time on task is probably most important as a means for teachers to convey to the students the importance of schoolwork and teaching. In Rutter's investigation, time on task correlated significantly with school attendance but, although there was also a positive correlation with the students' school results, it was not significant probably because how much students learn relates also to the efficiency of the teaching.

3.1. In this school teachers can use the time alloted to teaching for teaching.

3.2. In this school scheduled extra-curricular activities take up a lot of time which would be better spent on helping the students reach the achievement goals.(*)(NR)

3.3. In this school non-scheduled extra-curricular activities take up a lot of time which would be better spent on helping the students reach the achievement goals.(*)(NR)

3.4. It is not unusual for the teachers here to end their lessons before the bell rings.(*)

3.5. It is not unusual to reward students by allowing them to skip lessons.(*)(NR)

3.6. Whenever parents ask for extra holidays for a student, they are usually given permission without much discussion.(*)(NR)

3.7. Students often miss lessons in order to take part in extra-curricular activities.(*)(NR)

4. Teaching methods

The questions in this section attempt to integrate various aspects which were found to be characteristic of the teaching methods used in successful schools and in successful teaching. Several of the questions concern the teacher's commitment to student learning, particularly with respect to students experiencing difficulties.

4.1. After having taught the students the basics, there is seldom time left for intellectually more challenging and stimulating teaching.(*)(NR)

4.2. It is the ambition of the teachers in this school to practise teaching which stimulates creative thinking, provides training in problem solving and is intellectually challenging.

4.3. I require my students to make extensive use of the school library.

4.4. Students with learning problems are usually placed permanently in a special group.(*)(NR)

4.5. As a rule, resources allocated for extra teaching and remedial teaching are used to support the work in the normal class.

4.6. We teachers are called upon to reprimand rather than encourage students far too often to my liking.(*)

4.7. In this school the students' work is often exhibited on the walls.

4.8. When I give homework it is almost always based on something I have gone through in the lesson.(NR)

4.9. In this school we use alternative teaching methods to help students with different kinds of difficulties.

4.10. Tests and written examinations based on homework are followed up according to the students' demonstrated strengths and weaknesses.

4.11. I give the weaker students in the class the same opportunities to answer questions as I give the other students.

4.12. The outcome of tests and diagnoses is often used as a basis for planning remedial teaching.

4.13. Students must acquire the basic knowledge and skills before they are allowed to go on to the next phase of instruction.

4.14. Evaluating student outcome is a recurrent aspect of the work of teachers.

4.15. The developmental work of the school is often based on evaluations of student outcome.

4.16. Assigning homework is an accepted rule among the teachers in the school.

5. Setting teaching goals

Emphasis on setting both short-term and long-term goals has been shown in many studies to be a characteristic of successful schools (Grosin 1985, 1989a, 1989b).

5.1. The teachers in the school usually set short-term goals for their teaching.(NR)

5.2. The teachers in the school usually set long-term goals for their teaching.

5.3. I set the goals for my teaching on my own and not together with the other teachers.(*)

5.4. Teaching goals are often set for the individual student.

5.5. Teaching goals in my subject(s) are usually set for the individual student and not for groups of students, for the school class or for the whole grade.(*)(NR)

5.6. The teachers in my subject(s) usually work together to set the teaching goals, schoolgrade by schoolgrade.

6. Teacher responsibility - teaching

This variable has been inspired both by Rutter et al. (1979) and Brookover et al. (1979). Rutter found that in the better schools teachers were more often available when the students wanted to talk over problems, whether or not the problems were directly connected with schoolwork. Brookover points out the difference between schools with regard to the teachers' responsibility for student progress, especially with respect to the low scoring students. This is related to the teachers' expectations of the students and their view of the school's possibilities of succeeding independently of the students' social background and intelligence.

6.1. The fact that it is permitted by school law to give particular students more hours of instruction than the number stipulated in the school schedule has been noted in this school.

6.2. The possibility provided by school law to give particular students more hours of instruction than the number stipulated in the school schedule has been made use of in this school.

6.3. The teachers in this school are fully aware that we serve as models for the students.

6.4. It is a norm in this school that teachers do not take leaves or are otherwise absent from school if it will affect the students negatively, unless they have a vital reason for doing so.

6.5. No student leaves this school without having acquired basic knowledge and skills.

6.6. In this school the students are able to acquire basic knowledge and skills regardless of their social or ethnic background.

6.7. If the regular teacher or a substitute is absent from class for some reason, one of the other teachers who happens to have a free period just then can be relied upon to take over the class.

6.8. In this school, as a rule, extra instruction will be given to any student who needs it.

6.9. Unfortunately, we cannot spend extra time on a lesson to ensure that all of the students have learned the material.(*)(NR)

6.10. Students who seem to require extra help in order to understand some part of the lesson are given the help they need.

6.11. As a teacher, you see students from time to time who are falling behind and who are going to have problems in the future, but you cannot do as much about it as you would like. (*)

6.12. Because it can be so difficult to carry out teaching in the class, many of the teachers in this school have lowered their level of ambition.(*)(NR)

6.13. All teachers assume responsibility for their students learning to read and write.

6.14. As a teacher you have a special responsibility. It is not just any job!

7. Teacher self-confidence and sense of commitment

This factor has not, as far as I can ascertain, been discussed earlier in the literature on school climate. Rutter et al. (1979) took up the question of teaching ability. Their conclusion was that it is considerably easier to keep order and teach in accordance with pedagogical ideals in schools that are characterized by a good climate. The study by Mortimore et al. (1988) indicates the same finding. These findings would seem to indicate that schools differ with respect to the prerequisites that would enable teachers to become better at their jobs. In all probability this difference can be traced to the teachers' sense of commitment and self-confidence. The preliminary results from my own research provide an additional foundation for the construction of this factor and the related questions.

7.1. Most of the teachers in this school feel self-confident as educators.

7.2. Most of the teachers in this school feel self-confident when it comes to maintaining discipline and order in the classroom.

7.3. Most of the teachers in this school feel self-confident when called upon to state their views at conferences and meetings.

7.4. The absolute majority of teachers in the school are enthusiastic and committed to their work.

7.5. For the most part I feel very satisfied to be a teacher in this school.

7.6. In this school you feel that you can develop as an educator.

8. Teacher cooperation

A probable conclusion from the research on successful schools is that the degree of cooperation amongst teachers and their mutual aims concerning both teaching and social relationships in schools are important factors when considering the school's pedagogical and social climate (Rutter et al. 1979, Mortimore et al. 1988.).

8.1. The organized forms for collaboration among teachers in this school have very little to do with the content and methods of teaching.(*)

8.2. The head(s) of department in my subject(s) can certainly be characterized as active leaders in developing teaching methods and content.

8.3. The meetings and conferences held in this school provide wholly satisfactory opportunities for discussing staff problems.

8.4. I have the support of my colleagues in selecting teaching content and methods.

8.5. I have the support of my colleagues in understanding and solving problems of disorder in the classroom and disruptive students.

8.6. "You're on your own" is one way of describing the working conditions in this school, whether you are talking about teaching or about providing social training for the students.(*)

8.7. In this school we have skillful educators who are recognized authorities for the other teachers.

8.8. The school's more experienced teachers give active support to the newly examined teachers and to the less experienced teachers.

8.9. If you feel the need to discuss any teaching problem, you will always find a colleague at the school who is ready to discuss it with you.

8.10. There are teachers in the school who are specially responsible for leading the development of teaching methods and content.

8.11. It is the individual teacher rather than the staff as a collective body who has the greater influence over which principles are to guide the social training of the students. (*)(NR)

8.12. Evaluating the work of the teachers is a recurrent aspect of the developmental efforts of the school.

8.13. The developmental efforts of the school are often based on evaluations of the work done by the teachers.(NR)

8.14. The teachers in this school treat each other with respect.

8.15. Meetings and conferences at the school are almost entirely concerned with problems in the classroom and with individual students.

9. Teacher openness to contact not directly related to teaching

This factor, as well as questions in factor 10, 11 and 17, is an attempt to uncover the kinds of social relationships between teachers and students that were found in the research on successful secondary schools (e.g. Rutter et al. 1979). Here we are concerned with the teachers' respect for the students as human beings, which implies working towards creating good working conditions in the classroom, giving the students responsibility, but at the same time reacting against bad conduct in a consistent manner without meaningless and severe sanctions against either the individual or the student body.

9.1. It is quite common for students to discuss things with me that are not directly related to the lessons.(NR)

9.2. Teachers in the school generally take the time to talk with their students about things that are not directly related to the lessons.

10. Teacher responsibility and actions - behavior
(See factor 9 for a comment.)

10.1. As teachers in this school we feel a responsibility for the behavior of all of the students.

10.2. The teachers in this school feel a responsibility for the behavior of the students only in their capacity as class leader.(*)

10.3. If a teacher sees some students fighting, it is natural to intervene even if the teacher does not know the students.

11. Students' environment
(See factor 9 for a comment.)

11.1. The environment in the school is pleasant and congenial.

11.2 Things that get broken or damaged are usually quickly repaired.

12. Teachers' values and norms

This factor is an attempt to uncover some of the important values that were found to characterize successful schools and which were not already covered under the other factors. An example is the level of academic emphasis.

12.1. The main task of the school is to impart knowledge and encourage studies, not to foster children.(NR)

12.2. That school is a pleasant place to be in and that the students feel at home here is more important than their studies and their knowledge development.(*)(NR)

12.3. The teachers in this school feel it is important to treat the students with respect.

12.4. As a teacher one should act as a model for the students.

12.5. Teachers in this school do not take leaves if it will have a negative affect on the students and the lessons, unless they have a very strong reason.

13. School leadership

One of the most characteristic aspects found in the research on successful schools is the importance of the school leadership for the pedagogical and social climate of the school (Grosin 1985, 1989a, 1989b).

13.1. The views of the principal regarding the goals and values that should form the basis of teaching and social training are explicit and well-known to the teachers.

13.2. The principal and school leaders have high expectations regarding the students' school outcome.

13.3. The demands and expectations of the principal and school leaders regarding the school outcome of some groups of students are very low.(*)

13.4. The demands and expectations of the principal and the school leaders regarding student behaviour in school are high.

13.5. The responsibility I feel and the pressure on me to do a good job in school do not come from the school leadership.(*)

13.6. At this school the principal seems to place high priority on administrative tasks and to contacts with administrative bodies outside of school.(*)

13.7. At this school the principal seems to place high priority on the pastoral care of the students.(*)(NR)

13.8. The principal's expectations of me as a teacher are high.

13.9. At this school one can really say that it is the principal and the school leaders who lead the pedagogical work.(NR)

13.10. Before the school leaders make any decisions on important matters, they discuss the questions with us first.

13.11. The school leaders support the teachers if there are any problems concerning content and teaching methods.

13.12. Teachers are assigned to their respective classes only after consultations have taken place between the teachers and the school leaders.(NR)

13.13. The school leaders support the teachers if there are any conflicts with individual students.

13.14. The school leaders support teachers who come into conflict with parents.

13.15. The school leaders support teachers who have problems maintaining order in the classroom.

13.16. One can count on being visited in the classroom by someone from the school leadership at least once a month.

13.17. One cannot count on being visited in the classroom by someone from the school leadership more than once a term at the most.(*)

13.18. The principal's interest in pedagogical questions seems to be considerable.

13.19. The school leaders often show forcefulness in decision-making.

13.20. Careful preparation is given to the planning of teacher conferences at the school and in-service training for the staff.

13.21. The assignment of teachers to their respective classes takes place after careful thought has been given to the pedagogical consequences.

13.22. At this school it is the individual teacher rather than the school leaders who has the greater influence over which principles should form the basis for teaching and for the social training of the students.(*)

13.23. The school leaders often meet informally with teachers and students.(NR)

13.24. The school leaders are available for helping to solve conflicts among the teachers.

13.25. The school leaders are often to be seen in the school.

13.26. The school leaders and the staff work together in planning the teacher conferences at the school and the programs for in-service training.(NR)

14. Teachers' environment and resources

Rutter et al. (1979) showed positive and in some cases significant correlations between the teachers' opportunity to get clerical help and student outcome.

14.1. The school has excellent facilities for the relaxation of the teachers.

14.2. There is ample provision for clerical help for teachers in the school.

14.3. There is ample working space for teachers in the school.

14.4. The school environment is pleasant and congenial.

14.5. Things that get broken or damaged are quickly repaired.

14.6. In my subject(s) the school is well supplied with resources for teaching.

15. Home and school

The important but ambiguous relationship that exists between home and school has been mentioned by Brookover et al. (1979), among others. Their measurement of the parents' involvement in the life of the school showed a 0.45 correlation with the students' school achievements. The correlation was greatest in schools where the majority of the students were black, but negative in schools where the students were mostly white and had a high social status. Mortimore et al. (1988a) showed that in successful schools parents were more apt to visit the classroom, and meet with the teachers and the school leaders. On the other hand, a negative correlation was noted between the existence of parent-teacher organizations and student outcome. Other relevant research is that of Hannaway & Abromowitz (1985) and Wahlberg (1984) who showed that schools can very well influence the curriculum of the home with positive effects for student outcome. The statements in the factor concern how actively teachers and school leaders inform parents of the basic demands and expectations of the school as well as informing them about the development of individual students.

15.1. Through the school's agency the parents have good knowledge about the school's demands and expectations with respect to the students.

15.2. The parents are notified about problems occurring in the class.

15.3. As a general rule, parents are notified if their children behave badly in school.

15.4. It is a part of this school's policy to give the parents information about the importance of supporting their children's schoolwork.

15.5. It is a part of this school's policy to give the parents information about how they can support their children's schoolwork.

15.6. All of the parents are notified several times during the term about their childrens' academic development.

15.7. All of the parents are notified regularly about their childrens' development in school.

15.8. 90-95% of the parents take part in parent meetings and in scheduled "15-minute-talks" with the teachers.

15.9. To give adequate support to the children's schoolwork demands so much knowledge and good study habits on the part of the parents, that few parents can be counted on to do so.(*)(NR)

16. Staff agreement on values and school aims

The purpose of this factor is to try to ascertain the degree of concensus among the staff with respect to pedagogy and social training, a factor found to be characteristic of successful schools (Grosin 1985, 1989a, 1989b).

16.1. There is strong agreement in this school on pedagogical questions.

16.2. There is strong agreement amongst teachers at school on which principles should be applied in the social training of the students.

16.3. If a decision is made which concerns fundamental principles for work in school, even teachers who are critical of the decision follow it.

16.4. If a decision is made about how teachers should act in individual cases, even the teachers who are critical of the decision follow it.

16.5. Generally, a decision which has been made is followed for a time, but after a while everything slips back to the way it was before.(*)

16.6. There is some kind of "control" in school to ensure that teachers master the teaching methods and course content which are prescribed by the curriculum.

16.7. The teachers in the school are in agreement about maintaining the school's rules of conduct.

16.8. There is agreement at school that teachers shall come in time for their lessons.

16.9. There is agreement at school that one shouldn't take a leave of absence or be absent from class if it will affect the students and the teaching negatively, unless one has a very good reason.

16.10. The individual teacher has greater influence over which principles should form a basis for the social training of the students than the staff as a collective body has.(*)

16.11. The individual teacher at this school has greater influence over which principles should form the basis for teaching and the social training of the students than the school leaders have.(*)

16.12. We teachers are very much aware that, in our contacts with the students, we should express the school's values and norms regarding teaching and social training.

17. Student responsibility and initiative
(See factor 9 for a comment.)

17.1. The students engage in many activities in school which they have have initiated themselves.

17.2. The students are encouraged to share the responsibility for creating a good working environment in the school.

8. Treatment of the data

8.1. Introduction

The data were analysed by means of a computerized program, the Statistical Analysis System (1985). At first, incorrect answers or items left blank on any questionnaire were eliminated and marked as missing values. But since the program thus eliminated all remaining answers on that particular questionnaire, I used instead the average value of the school as an approximation.

8.2. Reliability

The questionnaire's reliability was estimated by means of item analysis (Magnusson 1969, p. 238, formula 14:18) as well as by the SAS-procedure "proc reg". The two yielded largely the same results. Questions which did not correlate significantly with the total score on the questionnaire ($p > 0.001$) were eliminated.

8.3 Validity and other tests of the school climate questionnaire

Validity was analysed first by examining the rank correlation between school climate, i.e. the total score, and the response frequency of the teachers in the schools (chap. 10.3). There is good reason to believe that when the teachers and the principal of a school decide together to take part in a study of this kind, the tendency of an individual to respond is an expression of the pedagogical and social climate of the shool. A further

analysis of validity will be undertaken after the analysis of the qualitative data collected at four of the schools has been carried out.

We have also tested the correlations between the climate variable and the average grades and behavior of students in the eight schools (chap. 10.4.). Behavior was measured by means of a special scale developed within the project (Appendix 1). Furthermore, I have tested the correlations between climate and specially developed scales for student academic self-confidence (Appendix 2) and norms pertaining to school and schoolwork (Appendix 3). The main aim of these tests was to determine if positive correlations between the variables found in other studies could be reproduced in my data. They could also, however, be regarded as an indirect test of the validity of the climate questionnaire.

The same could be said about the test of the correlation between how teachers and students evaluate school climate in six of the schools where data from both categories were available.

The correlations were calculated by means of the Spearman rank correlations (r_s) (Kendall 1955). Significance was also calculated according to Kendall (1955).

Spokesmen for the new educational sociolology, for example Bourdieu and Passeron (Broady & Palme 1989), have criticized the use of student social background as an independent variable and the assumption that it has a causal effect on student achievement and adjustment at school. They advocate the concept of *cultural capital* as a means of characterizing the traditions regarding education and career which prevail in different social groups and families and which determine how children adjust to and take advantage of schooling. These aspects can only to a minor extent be described and accounted for by means of crude socio-economic variables. In the present study I therefor chose to use *parental occupation (PO)* to operationalize the socio-economic standard. I used data from the 1985 Swedish national census based on categorizing the occupation of the head of the household into four groups:
1 = upper-range salaried employees; 2 = self-employed and farmers; 3 = middle and lower-range salaried employees; 4 = skilled workers in service and industry.

Research provides evidence for the view that there may very well be a correlation between student social background and school climate as well as between school climate and the kind of dependent variables I have used here. I have therefore used a multivariate

method (Chalfield & Collins 1980) to test the impact of parental occupation on the relationship between school climate variable and the dependent variables.

9. Data collection

9.1. The schools

The study was carried out on eight schools (Table 9.1). Four of the schools (F1-F4) were also taking part in a parallel case study (Grosin 1985a and 1989a). The collection of data was carried out during the school year of 1987/1988. F1 was dominated by students from immigrant groups with low social status, F2 by students from upper middle class and F3 and F4 by students from native groups with low social composition. The fifth school (U5) had an average social composition. It was included in the study because the teachers' climate questionnaire was being used at the time in an improvement project at the school. I had data only from the teacher questionnaire from this school. Of the three remaining schools (G6-G8), the social composition in the one was high, in the second low and in the third average. These schools were included because they had taken part in a study on the reasons behind students' choice of high schools in Stockholm in which the climate questionnaires was used. The schools were similar with respect to choice of high schools but differed in social composition (Turcios-Flores, 1988).

Seven of the schools lie within the jurisdiction of the local government of Stockholm and the eighth within a neighboring municipality. The schools were not randomly sampled. However, they did represent different social strata. The differences with respect to achievement (mean grades) were quite substantial in 1986 but less so in 1988. With respect to social composition, none of the schools had a particularly poor achievement record for 1988 and only one school (F4) had a substantially better mean grade (0.28 on a five-point scale) compared with other schools with comparable social composition. None of the other schools differed from the mean more than one-tenth of a grade point. The conclusion is that the variance between the schools with respect to effectiveness must be considered as minor.

9.2. Procedure

In four of the schools taking part in the case study, the teachers were informed at a school conference of the purpose and design of the study. Thereafter the questionnaires were distributed through the teachers' mailboxes at school. The questionnaires in the remaining four schools were also distributed after a presentation of the study at a teach-

ers' conference. The presentation was made in three of the schools by a research worker and in the fourth by the teacher who had initiated the study of climate at his school.

The teachers were guaranteed full anonymity. Another set of questionnaires was distributed to all of the participants together with a letter of reminder. With the exception of one school, the teachers' response frequency was acceptable, although it could probably have been higher if the method I chose had permitted a closer analysis of those who had failed to reply in the first round. (Table 9.1).

The calculations are based on the results from seven of the schools. School G8 was excluded as the response frequency was only 48%. The low response frequency can be explained in part by the fact that a number of questionnaires was mislaid at the school.

Table 9.1
Teachers answering and student social background ans achievement

	Teachers answering		Social backgr.	Mean grade
	n	%		
School F1	24	69	3.48	3.18
School F2	19	73	2.79	3.52
School F3	25	75	3.15	3.28
School F4	30	75	3.16	3.52
School U5	36	72	2.95	3.40
School G6	31	67	2.84	3.45
School G7	30	57	3.26	3.20
School G8	12	48	3.08	3.40
Total	208			

10. Results

In this paper I present the results from the study using the teacher questionnaire in the seven schools and a comparison between teacher and student judgement of the climate in six of the schools.

10.1. Teachers as informants

We had made the assumption (see above Chap. 5, page 15) that teachers are reliable sources of information concerning the values and patterns of activity prevalent in their schools and that their responses reflect not only their own attitudes generally but the pedagogical and social climate of their schools.

The credibility of teachers as informants was tested by comparing their replies on Factor 13 "Goal and value consensus among staff" with a real expression of the level of consensus, i.e. the degree of variance in the climate measure (Table 10.1).

Table 10.1
The teachers' judgement of goal and value consensus (Factor 13) and the actual variance in the climate variable

	Factor 13		Climate	
	M	Rank	Variance	Rank
School 1	2.25	7	0.233	7
School 2	2.29	6	0.227	5
School 3	2.60	1	0.220	3
School 4	2.59	2	0.195	1
School 5	2.42	3	0.208	2
School 6	2.40	4	0.2203	4
School 7	2.35	5	0.232	6

The differences between the schools concerning variance are small. However the correspondence between the teachers' judgement of the consensus as to values and norms among staff and the actual variance in the climate measure is great. The rank correlation is 0.86 and significant ($p = 0.01$). Some support is then given to the assumption that it is possible to use teachers as informants concerning the pedagogical and social climate of their schools.

10.2. Reliability

There were originally 137 statements in the teacher questionnaire. The item analysis showed that 104 had satisfactory reliability ($p<0.001$). The non-reliable statements are marked by (NR) (p. 18- 28).

Reliability was unsatisfactory for a relatively large number of statements and questions in two of the factors: 2. Basic assumptions, and 3. Teaching time and for a couple of strategic statements in factor 12. Teachers' values and norms. The statements were reformulated in a later version of the questionnaire (Appendix 5).

10.3. Validity

As mentioned above validity will be further analysed when the results from case studies of four of the schools become available. So far I have tested for validity by ascertaining

the correlation between climate and the response frequencies of the teachers in the different schools (Table 10.2). As mentioned above I have also calculated the correlations between school climate on the one hand and student outcome, behavior, norms and academic self-esteem on the other, which, according to results from earlier research, should provide an indirect validation of the instruments used.

Table 10.2
Correlation between climate and the teachers' response frequency

	Climat		Response frequency	
	M	Rank	%	Rank
School F1	2.27	7	69	5
School F2	2.54	3	71	4
School F3	2.64	2	75	1
School F4	2.69	1	74	2
School U5	2.46	4	72	3
School G6	2.45	5	67	6
School G7	2.38	6	57	7

The rank correlation is 0.82, which is significant at the 0.01-level. Thus the instrument so far can be said to have validity.

10.4. Other tests

10.4.1. Climate and mean grades and parental occupation

There are good grounds for being critical of the kind of relative grades being used in the Swedish comprehensive school today. There is a risk that the norms used differ from school to school and that the same mean grade may represent different levels of knowledge in different schools. It would therefore have been an advantage if the analysis of student outcome could also have been carried out using some kind of standardized measure. Unfortunately, although tests of this kind do exist in some school subjects, they were not systematically in use at the time I conducted the study.

However, there are also arguments for the use of grades as a measure of student outcome. The schools taking part in the study are all located within a rather restricted geographical area which serves as a common labor market for the teachers. Also, the exchange of teachers between the schools in the district is fairly extensive. Furthermore,

the teachers meet one another rather frequently through union activities and continuing education programs. Thus, there is good reason to believe that there exists a fairly homogenous culture among teachers within a school district with respect to the requirements students must fulfill in order to attain the different grade levels.

Moreover, despite the formally relative character of the grading system, most teachers seem to treat grades as if they reflected absolute differences in level of knowledge. Two statements pertaining to these matters were included in the teacher questionnaire:

1. The relative grading system is in many instances an obstacle for students to get "grade credits" for better efforts.
2. In my subject(s) the grading system is used to reflect differences in the degree of knowledge attained rather than as a formal relative system.

The first question was answered in the negative and the second in the affirmative by a large majority of the teachers.

Another advantage to using grades is that they are based on the students' work in all subjects and that the teachers judge the students, not only on the basis of results from the various tests, but also on the students shool work and efforts as a whole.

The correlation between school climate and mean grades for the ninth year is seen in Table 10.3.

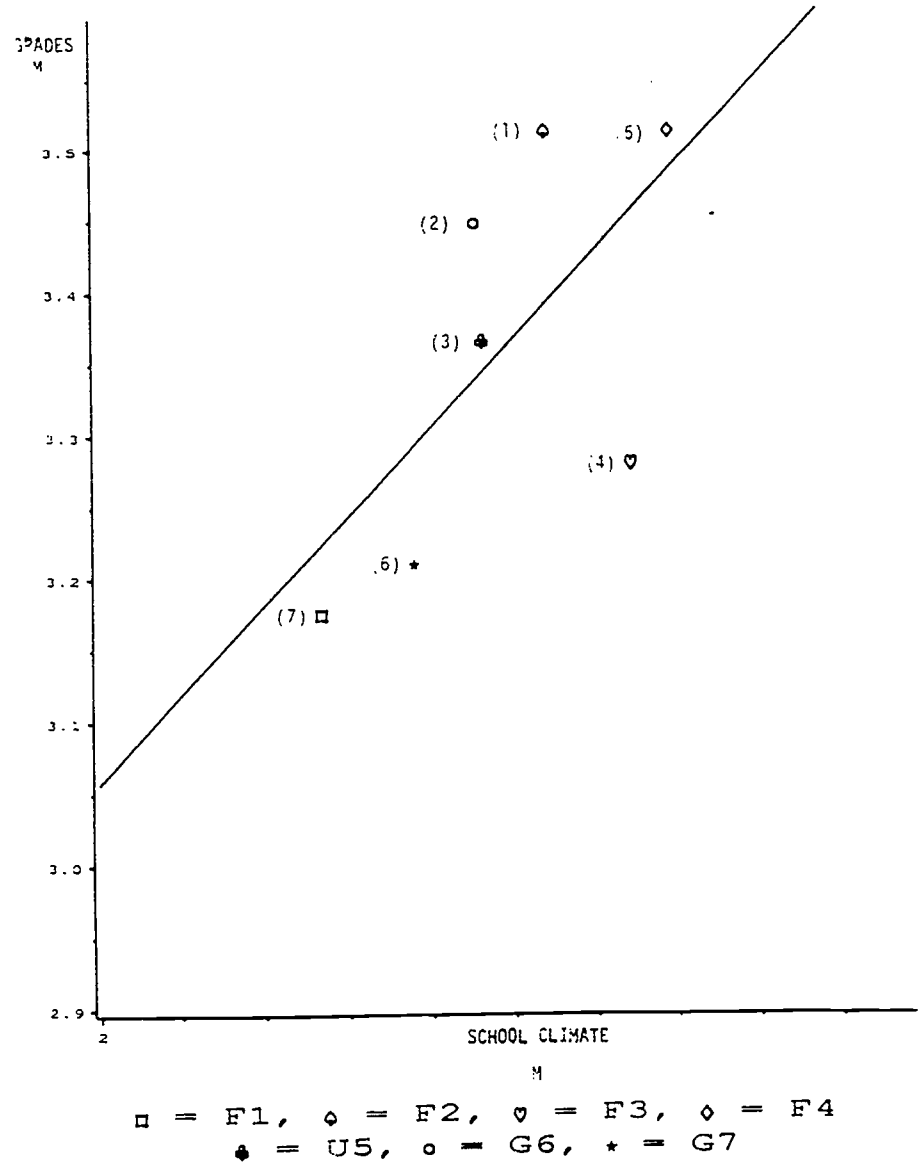
Table 10.3
School climate (teachers) and mean grades

	Climate		Grades	
	M	Rank	M	Rank
School F1	2.27	7	3.18	7
School F2	2.54	3	3.52	2
School F3	2.64	2	3.28	5
School F4	2.69	1	3.52	1
School U5	2.46	4	3.40	4
School G6	2.45	5	3.45	3
School G7	2.38	6	3.20	6

The rank correlation is 0.72, which is significant ($p = 0.02$). Parental occupation (PO) has a significant correlation with mean grade ($r_s = 0.77$, $p = 0.04$) and a positive but not significant correlation with climate ($r_s = 0.38$, $p = 0.14$). The multivariate analysis showed an influence by PO on the correlation between climate and mean grade, although it was not significant ($p = 0.15$).

The relationship between the three variables is also illustrated in Diagram 10.1. The number assigned to each school represents its rank according to PO from high to low status.

Diagram 10.1
Climate (teachers) student social background (PO) and mean grades in seven schools



The school with the highest score in both variables has a comparably low PO value. The results which are in line with earlier research, thus indicate that school climate appears to be a variable which is to some extent independent of social background and is associated with student achievement.

Table 10.4 shows the correlation between school climate and student social background in the schools.

Table 10.4
School climate (teachers) and student social background (PO)

	PO		Climate	
	M	Rank	M	Rank
School F1	3.48	7	2.27	7
School F2	2.79	1	2.54	3
School F3	3.15	4	2.64	2
School F4	3.16	5	2.69	1
School U5	2.95	3	2.46	4
School G6	2.84	2	2.45	5
School G7	3.26	6	2.38	6

The rank correlation is 0.38 but not significant ($p = 0.14$). (See also Diagram 10.2.)

As I pointed out above, earlier research shows a correlation between these variables, even if it seems that it is possible to find schools with both good and poor climate in all residential areas. This is an important question which concerns, among other things, strategic climate factors as the attitudes and expectations of teachers regarding students from different social origins. I will pay further attention to this question in later studies where the analysis can be based on a larger sample of schools.

10.4.2. School climate and student behavior

With the exception of the statements and questions that were designed to measure climate, 33 statements pertaining to student behavior were included in the teacher questionnaire (Appendix 1). Theoretically, student behavior is a variable that is dependent on, among others things, school climate, i.e. on the value, norms and ways of action characteristic of the principal and the teachers. According to Rutter et al. (1979), behavior was the outcome measure having the highest correlation (0.92) with the combined measure on school climate and which was influenced hardly at all by student composition.

A problem is that the behavior variable had not been validated in the study. However, student behavior is a manifest and concrete reality for teachers and their responses to the 32 statements, in all probability, give a good estimation of actual circumstances. The

fact that item analysis showed that 31 of the 32 questions were reliable support this view. The correlation between school climate and student behavior is shown in Table 10.5.

Table 10.5
School climate (teachers) and student behavior

	Climate		Behavior	
	M	Rank	M	Rank
School F1	2.27	7	2.24	7
School F2	2.54	3	2.67	2
School F3	2.64	2	2.65	3
School F4	2.69	1	2.83	1
School U5	2.46	4	2.62	4
School G7	2.45	5	2.58	5
School G7	2.38	6	2.26	6

The rank order of the schools with respect to the two variables is almost identical. r_s = 0.96 (p = 0,0002).

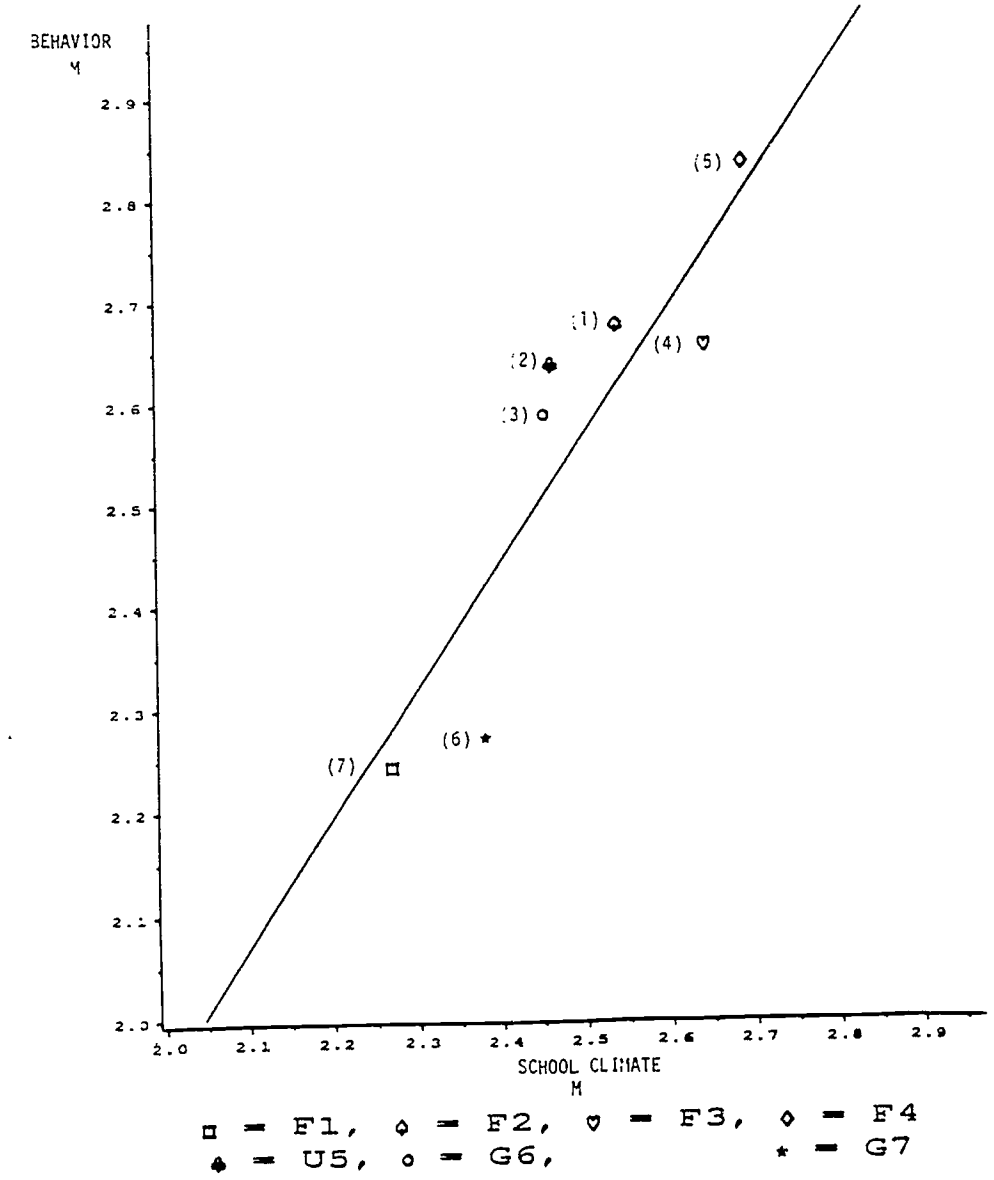
Most certainly there is a risk that such a strong correlation may be due to variable contamination. Some statements included in the climate variable do in a sense concern student behavior and order in the school and classroom. However, there are only 15 such statements of a total of 102, and they do not concern student behavior directly, but rather the principal's and teachers' ways of action: for example their homogenity with respect to the principles adopted by the school; the tendency of teachers to act when confronted with student misconduct and fighting, even if they do not know the students involved; the principal's attitudes and readiness to support the teachers in conflicts with individual students, and so on (See for example page 22-26, statements 7.2, 8.5, 10.1-10.3, 13.13 and 15.3). The absolute majority of the statements and questions in the questionnaire concern aspects other than order and behavior.

Another possible explanation for the high correlation I obtained is an influence of student social background on both variables. Parental occupation (PO) is positively but not significantly correlated with student behavior (r_s = 0.61, p = 0.14). As noted earlier, PO did not correlate significantly with climate. According to the multivariate analysis made.

there was no significant influence by PO on the correlation between climate and student behavior (p = 0.23).

In Diagram 10.3 the relationship between school climate, student behavior and PO is illustrated. The numbers assigned to each school represent their rank order with respect to PO from high status to low.

Diagram 10.2
School climate (teachers), student behavior and student social background (PO) in seven schools



We have shown earlier that social background has a rather low correlation with school climate. In neither of the two schools having the most favorable climate did the students have high mean social status. One of these schools also had the most favorable student behavior and the other asserted itself well compared with the two schools in which the students had a more advantageous social origin.

In other words, my findings confirm results from other studies and demonstrate that students attending schools with a good climate can behave better or as well as students attending schools that have a more favorable social composition but a poorer climate. Thus, school climate may to some extent influence student behavior in school.

The results concerning student achievement and behavior indirectly support the conclusion drawn earlier, that the climate measure has validity.

10.4.3. School climate and student self-reliance and norms

In the student questionnaire, statements pertaining to self-reliance (Appendix 2) and norms regarding the school, the teachers and classmates (Appendix 3) were also included. Item analysis showed that, with one exception, all of the statements and questions were reliable.

The correlations between climate and variables measuring the personal adjustment of the students were not explored to the same extent as were student achievement and behavior. Brookover et al. (1979) found positive correlations between climate (social system) and the students' academic self-reliance and concept of self, which might indicate that the pedagogical and social climate of a school has significance also on a deeper psychological level.

However Brookover also found that the students' social and ethnic origins had a substantial correlation with these variables. Dencik et al. (1988) in their investigation on children in Swedish kindergartens, studied the roles of parents and nursery school teachers and their different ways of relating to the children. They showed that the children's behavior towards the nursery school teachers is emotionally limited and that the influence nursery school teachers can have on the children's emotional development is therefore also limited. Instead it is the parents who influence the children's emotional and personal development by virtue of their unique function as targets for the children's deeper emo-

tions and feelings. The kindergarten can however have great importance in other respects. for example by providing a pedagogically stimulating environment and an opportunity for social training which parents cannot provide to the same extent. These results appear to be highly relevant for the school where the possibility to affect the students fundamental and deeper emotional development is generally even less.

In this study the correlations between school climate and two school relevant variables. *students' self-esteem* and *norms* were calculated. The analysis is based on the six schools in which I had data from both teachers and students. Item analysis showed that all but one of the statements were reliable.

Table 10.6
School climate (teachers) and student academic self-reliance in six schools

	Climate		Self-reliance	
	M	Rank	M	Rank
School F1	2.27	6	3.07	5
School F2	2.54	3	3.14	2
School F3	2.64	2	3.12	3
School F4	2.69	1	3.09	4
School G6	2.45	4	3.17	1
School G7	2.38	5	3.06	6

The rank correlation between climate and self reliance is positive, $r_s = 0.37$, but not significant. In the table the influence of social background can be seen. The students in the two schools with higher social status (F2 and G6, see Table 9.1) have better self-reliance than expected according to climate, and the students in three of the four schools with low status (F3, F4 and G7) have less self-reliance than expected. This is confirmed by the correlation between students' PO and self-reliance which is 0.86 and significant ($p = 0.03$). PO has no significant influence, however, on the correlation betwen climate and self-reliance ($p = 0.12$).

The correlation between climate and student norms is shown in Table 10.7.

Table 10.7
School climate (teachers) and student norms

	Climate		Student norms	
	M	Rank	M	Rank
School F1	2.27	6	2.83	2
School F2	2.54	3	2.795	3
School F3	2.64	2	2.84	1
School F4	2.69	1	2.803	3
School G6	2.45	4	2.77	4
School G7	2.38	5	2.68	6

The rank correlation between the variables is 0.31 and not significant. There is no correlation between social background and student norms, $r_s = 0.003$. A further examination of the table shows that the ranks correspond quite well, with the exception of one school where the norms are more positive than expected. This was the only school where students from minority groups were in the majority (F1). This is in accordance with Brookover et al. (1979)) who found self-esteem among black students to be more positive than expected.

Thus, according to my data, when comparing the variables social and ethnic origin on the one hand and school climate on the other, the background variables seem to have the greater influence on the two dependent variables student self-reliance and norms, whereas the school climate variable seems to have the greater influence on student achievement and behavior. This seems to confirm what was said above about the possible effects of schools on student personality and norms. There is no basis as yet for drawing any firm conclusions, but I intend to investigate this aspect more thoroughly when the correlations can be tested on a larger number of schools.

10.5. Teacher and student evaluation of school climate

We have data from both teachers and students in six of the schools and it was therefore possible to examine the degree of correspondence between the two categories with respect to judgement of climate. It can also be seen as another indirect test of the validity of the questionnaires. The results are presented in Table 10.8.

Table 10.8
Teachers' and students' evaluation of school climate in six schools

	Teacher Climate		Student Climate	
	M	Rank	M	Rank
School F1	2.27	6	2.24	6
School F2	2.54	3	2.67	2
School F3	2.64	2	2.65	3
School F4	2.69	1	2.83	1
School G6	2.45	4	2.58	4
School G7	2.38	5	2.26	5

The rank correlation is 0.83 and significant ($p_s = 0.02$). There is no significant correlation between student social background and school climate, either when measured by means of the teacher questionnaire or the student questionnaire. Nor does social background have any significant influence on the correlation between the two measures of school climate ($p = 0.19$).

11. The curriculum of the home

The results to date from the research on school effects motivate the hypothesis that. firstly, parents' attitudes and ways of action concerning their childrens' life and work in school do not necessarily correspond completely with their social status (Hannaway & Abromowitz 1985, Sammons et al. 1985). Secondly, the curriculum of the home (COH) may very well prove, not only to have a direct influence on student performance (Bloom 1984, Wahlberg 1984), but also to be a key factor in the development of the pedagogical and social climate of a school. In the Junior Study (Mortimore et al. 19-88) students in the voluntary schools had better outcome than expected. Interestingly enough, in these schools, to a larger extent than in public schools in general, the ways of action characteristic of all successful schools were applied. One of the reasons for this may be that the curriculum of the home is more favorable in families who choose a voluntary school for their children.

So far no investigation has included this factor in a multivariate analysis to test its influence and role in the dynamic interaction between the various factors causing differences in student outcome.

A study of COH also makes it possible to pay more attention to the effects of the cultural capital of different social groups on student outcome.

Any study of COH should comprise at least four factors: 1) the extent to which parents directly support their children's schoolwork; 2) parents' interest in their childrens' schoolwork and life generally; 3) the parents' general interest and attitudes towards the school; 4) the extent to which parents create orderly living conditions at home for their children.

In the present study, seven statements pertaining to COH were included in the teacher questionnaire. Even if the statements cover the four above-mentioned factors, this part of the study is highly tentative according to the limited number of statements. However, I did use these seven statements as a preliminary test of the correlations between COH and the dependent variables. The rank correlation between COH and school climate is positive (r_s=0.43), but not significant. This exceeds the correlation between PO and climate (see page 38 above). However, there is a strong correlation between PO and COH (r=0.90, p=0.005) and the multivariate analysis shows that the correlation between COH and school climate is due to a great extent to the influence of PO (p=0.01). I have therefore not tested the influence of COH on the above calculated correlations.

12. Summary and conclusions

We have accounted for the theoretical and empirical bases as well as the practical and economic motives for developing instruments to measure the pedagogical and social climate of schools. I have further shown the basis for and content of a teacher questionnaire designed for this purpose and have tested its reliability and validity. Reliability was tested by means of item analysis and 102 of 137 statements were significantly correlated with the total score of the questionnaire. Validity was tested by calculating the correlation between the climate measure and the response frequency of the teachers in seven of the schools. The correlation was found to be significant.

We also tested the correlations between climate and student achievement, behavior, norms and academic self-reliance as well as the correspondence between the teachers' and the students' evaluation of climate. Despite the minor variance regarding effectiveness among the schools the statistical calculations showed significant correlations between climate and both student achievement and behavior. Even if there were correlations between student social background and both the climate variable and the dependent variables, this is not a sufficient explanation of the correlations found. The results indicate that stu-

dent outcome in schools with a good pedagogical and social climate is relatively better than or comparable to the outcome in schools having a more favorable social composition but with a poorer school climate. School process therefore seems to have an impact on student achievement and behavior which to some extent is independent of the students' social background.

The correlation between climate and students' norms and academic self-reliance did not reach significance. The analysis shows that ethnic and social background seems to have a great impact in these cases.

There was considerable correspondence between the teachers' and the students' evaluation of school climate in the six schools where I had data from both categories.

To sum up, the results of the different tests of the teacher questionnaire are quite satisfactory and promising as to the usefulness of the questionnaire for measuring the pedagogical and social climate of schools. The quality of data obtained and the test procedures used were, however, not wholly in accordance with the ideal developed within research on school effects and school climate. The results must therefore be seen as preliminary and a definite standpoint on the usefulness of the instrument cannot be taken until it has been tested in a study in which a preferably larger and random sample of schools and individual data can be used. The instrument should therefor be used in the continuing research on school effects and school climate in the Swedish school system.

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Appendix 1

STUDENT BEHAVIOR AND TREATMENT OF TEACHERS

1. Unfortunately, in practice social training in school often consists of reprimands and rebukes.(*)

2. "Outspokenness" on the part of the students in this school far too often takes tne form of cheek and lack of respect.(*)

3. With few exceptions, the students are open and pleasant to deal with.

4. Most of the students are enthusiastic and attentive during the lessons.

5. Teachers are treated respectfully by the students of this school.

6. As a teacher, one is constantly negotiating and haggling with the students about what and how much should be covered in the lessons and homework.(*)(NR)

7. Only a few students in this school show a lack of respect for the teachers.

8. Students often take constructive initiatives which are useful in the teaching.

9. Students in this school seldom ask for extra help in connection with the teaching, even if they need it.(*)

10. Concerning order in the classroom, it is possible in most lessons to interact with the whole class to an extent which is pedagogically motivated.

11. There is sufficient order in the classroom and attentiveness on the part of the students to allow the teacher to go through the material that had been prepared for the lesson.

12. Stealing and the destruction of student property occur very seldom in school.

13. Stealing and the destruction of the teachers' property occur very seldom in school.

14. It is extremely unusual for students to come to school without the material and the books they need.

15. The working climate in the classroom is completely satisfactory in this school.

16. I feel completely safe with the students during lessons.

17. I feel completely safe with the students in the corridors, the school diningroom and in the school grounds.

18. The students in the main treat each other very well.

19. Students very seldom come late to school.

20. Truancy is unusual in school.

21. The degree of attentiveness on the part of the students is such that some of them have difficulty following the teaching.(*)

22. Students are seldom absent from school.

23. There is no mobbing in school.

24. Inattentive and disruptive students prevent the full use of the lesson time required for teaching.(*)

25. It is possible to begin teaching almost immediately after the students have come into the classroom.

26. Nearly all the students do their homework.

27. The choice of teaching methods is dictated, as a rule, by the attentiveness of the students and the degree of order in the classroom, rather than by content and pedagogical desirability.(*)(NR)

28. The pupils are encouraged to share the responsibility for creating a good working environment in the school.

Appendix 2

ACADEMIC SELF-CONFIDENCE

1. I know I can do well in school if I work hard.

2. In most cases I feel I'm well prepared for tests and examinations.

3. I'm often afraid I'm going to be asked a question when I haven't raised my hand (*).

4. If I want to hard enough, I'm sure I'll be accepted for the advanced senior high school courses.

5. People like me have little chance to do what they want in life.

6. I'm positive I ll get the kind of education my parents expect of me.

Appendix 3

STUDENT NORMS

1. Most of my teachers are really OK.

2. I'm doing quite well in school.

3. I'm sure I'll be able to use what I've learned in school.

4. All the students in my class care about succeeding on tests and examinations.

5. I always do my homework.

6. Most students like it when the teacher keeps order in the classroom.

7. Students who do things like shoplifting are usually heroes to their classmates.(*)

8. If you ask a teacher for extra help during recess or after school, the other students will tease you for it.(*)

9. The domineering students in the class are often those who don't do well in school.

10. I'm often disturbed by other students in the class when I'm trying to do my schoolwork.

11. I don't feel very safe out on the schoolground or in the corridors.(*)

12. Mobbing occurs in the school.(*)

13. In my class there are one or more students who are practically always bullying the other students.(*)

14. Students who can get a teacher really worked up are treated like heroes by the others.

15. It's a good thing there are school activities that sometimes take time away from ordinary classroom work.(*)

16. Being with my friends in school is more important than schoolwork.(*)

17. The students often help each other with schoolwork.

18. I always try to have my books, writing paper and pencils with me, no matter which teacher I have.

Appendix 4

THE CURRICULUM OF THE HOME

1. Most parents support the work the teachers do.

2. Most parents take responsibility for their children's behavior in school.

3. Most parents seem to be aware of how important their support is to the outcome of school for their children.

4. Most parents have high expectations regarding their children's results in school.

5. Most parents have high expectations about the kind of upbringing the school provides for the students.

6. The values of teachers and parents regarding schoolwork are very similar.

7. The relationship between the school and the home is congenial.

Appendix 5

RELIABLE STATEMENTS INSERTED IN THE FINAL VERSION OF THE TEACHER QUESTIONNAIR

Teachers are very seldom late for their classes.

There is widespread concensus among the teachers on the aims of schooling.

The headmaster at this school gives priority to student welfare.(*)

Both organized and spontaneous cooperation among teachers occur frequently in my subject(s).

Our school conferences are worth the time spent and serve a useful purpose in the fostering of the students.

Our school conferences are worth the time spent and serve a useful purpose in our teaching.

The views of the majority of the teachers on the aims of schooling and methods of work are in agreement with those of the headmaster.

Sometimes teachers reward students by letting them skip lessons.(*)

Other scheduled activities for the students take a lot of time away from teaching.(*)

Other unscheduled activities for the students take a lot of time away from teaching.(*)

All the students I come into contact with have the intellectual ability and social prerequisites for achieving at least a grade 2 in their studies.

The home environment of some of the students severely restricts how much they are able to learn in school.(*)

The term "weak" is often used in this school to characterize students who haven't succeeded very well in their studies.(*)

The primary manner in which poor behavior is dealt with in this school can be characterized as "moderate and consistent".

The primary manner in which poor behavior is dealt with in this school can be characterized as "consistent appeasement".(*)

Suspension from classes is very rarely used as a penalty for poor behavior in this school.

The primary manner in which poor behavior is dealt with in this school can be characterized as "laissez faire".(*)

The way in which poor behavior is dealt with in this school is inconsistent.(*)

The purpose of schools is both to foster and to instruct, but instruction is the basis for all other activity in school.

The most important concern of the school is the students' knowledge development and studies.