DOCUMENT RESUME

ED 282 727 SE 048 150

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TITLE A Comparison of the Psychosocial Climate of Different Types of Schools.
PUB DATE Apr 87
NOTE 28p.; Paper presented at the Annual Meeting of the American Educational Research Association (Washington, DC, April 20-24, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Attitude Measures; *Classroom Environment; *Educational Environment; Educational Research; Elementary Secondary Education; Foreign Countries; Higher Education; Institutional Environment; *Organizational Climate; Perception; *School Attitudes; *Teacher Attitudes; Teaching Conditions; Work Environment
IDENTIFIERS *Australia (Tasmania); *Psychosocial Factors

ABSTRACT

This study was designed to compare the psychosocial environments of different types of schools (primary, high schools, district schools, and secondary colleges). The Moos's Work Environment Scale (WES) was administered to teachers from government and non-government schools in Tasmania. The WES focused on the dimensions of involvement, work pressure, clarity, control, innovation, peer cohesion, staff support, autonomy, task orientation, and physical comfort. Findings indicated that elementary schools exhibited a more favorable school environment than high schools, district schools or secondary colleges on most WES scales, but especially in terms of innovation, the physical surroundings, and work pressure. Suggestions are offered for educational researchers and teachers on the use of the WES scale. Features of the instrument are discussed and descriptions of the scales and sample items are provided. A reference list is also included. (ML)

A COMPARISON OF THE PSYCHOSOCIAL CLIMATE OF DIFFERENT TYPES OF SCHOOLS

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Paper presented at a session sponsored by the Special Interest Group on the Study of Learning Environments at the Annual Meeting of the American Educational Research Association, Washington, April 1987

DIFFERENCES IN THE PSYCHOSOCIAL ENVIRONMENT OF DIFFERENT TYPES OF SCHOOLS

Abstract

Past work on psychosocial environments can be divided usefully into research involving students' perceptions of their classroom-level environment and studies of teachers' perceptions of their school-level environment. Of several instruments for assessing school environment, Moos's Work Environment Scale (WES) has considerable potential despite the fact that it was designed initially for use in any work milieu. Its ten dimensions of Involvement, Peer Cohesion, Staff Support, Autonomy, Task Orientation, Work Pressure, Clarity, Control, Innovation, and Physical Comfort seem quite well-suited to describing salient features of the teacher's school environment. Administration of a slightly reworded version of the WES to a large sample of teachers responding to both an actual form (N=599) and a preferred form (N=543) attested to the internal consistency reliability and discriminant validity of both forms with either the individual teacher or the school mean as the unit of analysis. As well, each scale in the actual form differentiated significantly between the perceptions of teachers in different schools. A comparison of the climates of four types of government schools revealed that elementary schools had more favorable school environments than high schools, district schools and secondary colleges on nearly all of the WES's 10 dimensions. In particular, elementary schools were most distinctive in terms of their greater innovation and physical comfort and their reduced work pressure relative to other school types.

A useful distinction can be drawn between school-level and classroom-level environment (Fraser & Rentoul, 1982; Genn, 1984). Whereas classroom climate might involve relationships between teachers and their students or among students, school climate might involve a teacher's relationships with other teachers, senior staff and the school principal. Student perceptions are used frequently to measure classroom environment, but they are used seldom in measuring school climate because it is felt that students could be unaware of many aspects of the school-level environment. The school environment also can be considered more global than the classroom environment. Furthermore, classroom-level environment research has been based on different theoretical and conceptual foundations from school-level environment research. The theoretical underpinnings of classroom environment research are described in several reviews (e.g., Chavez, 1984; Fraser, 1981b, 1986a, 1986b, 1986c; Moos, 1979; Walberg, 1979), whereas school environment research has been associated with the field of educational administration and rests on the assumption that schools can be viewed as formal organizations (Anderson, 1982; Thomas, 1976).

Educational researchers internationally have paid substantial attention to studies involving students' perceptions of classroom-level environment (see, for example, Fraser's [1986b] comprehensive review of the determinants of classroom environment in a previous issue of Journal of Research in Childhood Education). In contrast, research on teachers' perceptions of school-level environment has received less attention. Consequently, in order to facilitate future school environment research, a preliminary aim of the present paper is to report the first uses of an instrument called the Work Environment Scale (WES) in measuring teachers'

perceptions of their school environment. The major aim of the paper is to compare the psychosocial environments of different types of schools (namely, elementary schools, high schools, etc.).

Background

Three characteristic methods for conceptualizing and measuring human environments have been delineated by Moos (Insel & Moos, 1974; Moos, 1974). These are dimensions of organizational structure (in which behavior an environment is influenced by structural dimensions such as size of s staffing ratios, etc.), personal characteristics of milieu inhabitants (in which the characteristics of the environment are assumed to depend on the nature of its members' personalities, intelligence levels, etc.) and psychosocial characteristics and organizational climate (which involves both psychological and social dimensions of an environment, as perceived by insiders or outsiders, in a framework of person-milieu interaction). It is this third approach to measuring environments that is made use of in the WES.

Moos (1974) has found that the same three general categories can be used in conceptualizing the individual dimensions characterizing diverse psychosocial environments. This finding has emerged from Moos's work in a variety of environments including hospital wards, school classrooms, prisons, military companies, university residences and work milieus. The three basic types of dimensions are: Relationship Dimensions (e.g., support, involvement) which identify the nature and intensity of personal relationships within the environment and assess the extent to which people are involved in the environment and the extent to which they support and help each other; Personal Development Dimensions (e.g., autonomy, competition) which assess the basic directions along which

personal growth and self-enhancement tend to occur; and System Maintenance and System Change Dimensions (e.g., innovation, clarity, work pressure) which involve the extent to which the environment is orderly, clear in expectations, maintains control and is responsive to change.

One example of a school environment instrument is Coughlan's (1966, 1969) 120-item School Survey which measures teachers' perceptions of or attitudes to 14 dimensions of school environment (Administrative Practices, Professional Work Load, Nonprofessional Work Load, Materials and Equipment, Buildings and Facilities, Educational Effectiveness, Evaluation of Students, Special Services, School-Community Relations, Supervisory Relations, Colleague Relations, Voice in Educational Program, Performance and Development, Financial Incentives). KR-20 reliability estimates for the different scales, which vary in length from six to 10 items, ranged from 0.44 to 0.80 with a median of 0.67.

Pace and Stern's (1958) College Characteristics Index (CCI) measures student or staff perceptions of 30 environment characteristics of college or universities. Each of these 30 variables (e.g., Affiliation, Aggression, Deference, Impulsiveness, Order) was based on Murray's (1938) taxonomy and paralleled a needs scale in Stern, Stein and Bloom's (1956) Activities Index. That is, each Activities Index scale corresponded to behavioral manifestations of a needs variable, while the parallel CCI scale corresponded to environmental press conditions likely to facilitate or impede their expression. Stern (1970) reported that CCI scale reliabilities (KR-20 coefficients) ranged from 0.40 to 0.78 with a mean of 0.65 for a sample of 4,196 students and staff in 51 institutions in the U.S. The original CCI has been adapted by Stern (1961) to form the High School Characteristics Index (HSCI), which is suitable for use at the Grade 9 to 12 levels.

McDill, Rigsby and Meyers (1969) employed scales derived from a factor analysis of items based in part on the CCI and HSCI in exploring environment-achievement relationships. The large sample which provided perceptions of school environment consisted of 20,345 students and 1,029 teachers in a national U.S. sample of 20 high schools. Factor analysis revealed that 80% of the variance could be explained by the following six factors: Academic Emulation, Student Perception of Intellectualism-Estheticism, Cohesive and Egalitarian Estheticism, Scientism, Humanistic Excellence and Academically Oriented Student Status System. Multiple regression analyses revealed that, with father's education, student academic values and student ability held constant, each of the six environment scales was significantly related to mathematics achievement and five of the climate scales (with the exception of Scientism) were significantly related to college plans.

The School-Level Environment Questionnaire (SLEQ) (Fraser & Rentoul, 1982; Rentoul & Fraser, 1983) assesses teachers' perceptions of eight dimensions of school environment. The SLEQ consists of two Relationship Dimensions (Affiliation and Student Supportiveness), two Personal Development Dimensions (Professional Interest and Achievement Orientation) and four System Maintenance and System Change Dimensions (Formalization, Centralization, Innovativeness and Resource Adequacy). Each SLEQ scale contains seven items of five-point response format. For a sample of 83 teachers in Sydney, Australia, alpha reliability coefficients for SLEQ scales were found to be 0.87 for Affiliation, 0.70 for Student Supportiveness, 0.86 for Professional Interest, 0.91 for Achievement Orientation, 0.73 for Formalization, 0.80 for Centralization, 0.84 for Innovativeness and 0.81 for Resource Adequacy. Mean

correlations of a scale with the other scales for this sample ranged from 0.17 to 0.38. Use of the SLEQ and a classroom environment instrument together within the one study revealed some interesting associations between school-level and classroom-level environment (e.g., greater formalization in the school environment was linked with lower levels of classroom Participation, Independence and Differentiation) and attested to the potential usefulness of combining classroom-level and school-level environment instruments in the same study (Fraser & Rentoul, 1982).

Brookover reported a study in which perceptions of school environment were related to student achievement (Brookover & Schweitzer, 1975; Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978). The sample consisted of 8,078 fourth and fifth grade students, 327 teachers and 68 principals in a random sample of schools in Michigan. Brookover's instrument measures student perceptions of five dimensions (Sense of Academic Futility, Future Evaluations and Expectations, Present Evaluations and Expectations, Teacher Push and Teacher Norms, Academic Norms), teacher perceptions of five dimensions (Ability, Evaluations, Expectations and Quality of Education/College, Present Evaluations and Expectations for High School Completion, Teacher-Student Commitment to Improve, Principal's Expectations, Academic Futility) and principal perceptions of four dimensions (Parent Concern and Expectations for Quality Education, Efforts to Improve, Principal and Parent Evaluation of Present School Quality, Present Evaluations and Expectations of Students). Simple correlational analysis with the school mean as the unit of analysis revealed that the magnitude of the simple correlation between achievement and an environment scale ranged from 0.01 to 0.77. In particular, student sense of Academic Futility was found to have the largest correlation with achievement.

School Environment

Probably the most widely used instrument measuring school environment is Halpin and Croft's (1963) Organizational Climate Description Questionnaire (OCDQ). Thomas (1976) has noted that the OCDQ has been used in over 200 studies in at least eight different countries and that the instrument achieved something of bandwagon status in research in the field of educational administration. The final version of the OCDQ contains 64 items of four-point response format which measure teacher perceptions of eight factor-analytically derived dimensions. Four of these dimensions pertain to teachers' behavior and are called Disengagement, Hindrance, Esprit (i.e., morale) and Intimacy, while the other four dimensions pertain to the principal's behavior and are called Aloofness, Production Emphasis, Thrust and Consideration. Furthermore, Halpin and Croft have suggested a method by which profiles of OCDQ scores can be used to classify schools into six climate types: open, autonomous, controlled, familiar, paternal and closed. In terms of Moos's three general categories, the Disengagement, Esprit, Intimacy and Consideration scales are classifiable as Personal Development Dimensions, the Hindrance and Thrust scales are classifiable as Personal Development Dimensions and the Aloofness and Production Emphasis scales are classifiable as System Maintenance and System Change Dimensions. Although the OCDQ was designed initially for use in elementary schools, it has been used in numerous studies at the secondary school level.

The OCDQ formed the basis for the development of some new factor-analytic school environment scales by Finlayson (1973) in England and Deer (1980) in Australia for use in secondary schools. For example, Deer's instrument has two scales measuring student perception of teachers and other students (Teacher and Peer Concern for Students, Teacher and

Peer Control of Students), four scales measuring teacher perceptions of the teacher group (Job Orientation, School Organization, Personal Relations, Communication), three scales measuring teacher perceptions of head of department behavior (Participatory Management, Awareness, Professional Concern for Staff) and four scales measuring teacher perceptions of the school principal's behavior (Participatory Management, Sensitivity, Professional Consideration for Staff, Personal Consideration for Staff). Administration of these scales to a sample of 1,457 ninth grade students and 359 teachers in 10 coeducational government secondary schools in New South Wales revealed that alpha reliability coefficients for the 13 scales ranged from 0.71 to 0.92.

Description of WES

This instrument used in the present research was the Work Environment Scale (WES; Moos, 1981). Although the WES was designed for use in any work milieu, its 10 dimensions of work environment seem quite well suited to describing salient features of the teacher's school environment. The 10 scales in the WES consist of three measuring Relationship Dimensions (Involvement, Peer Cohesion, Staff Support), two measuring Personal Development Dimensions (Autonomy, Task Orientation) and five measuring System Maintenance and System Change Dimensions (Work Pressure, Clarity, Control, Innovation, Physical Comfort). The WES consists of 90 items of True/False response format, with an equal number of items in each of the 10 scales. Although the WES has been used in a variety of work milieus, it appears that this paper reports the first uses of the instrument in measuring teachers' perceptions of school environment. The WES is described in more detail in Table 1 which provides a scale description and sample item for each scale and shows each scale's classification

according to Moos's scheme. As well, Table 1 provides information about the method and direction of scoring WES items.

Insert Table 1 about here

In addition to an actual form (or "real" form in Moos's terminology), which assesses perceptions of what a work environment is actually like, the WES also has a preferred (or "ideal") form. The preferred form is concerned with goals and value orientations and meaures perceptions of the work environment ideally liked or preferred. Item wording is almost identical in the actual and preferred forms except that an item such as "Activities are well planned" in the actual form would be changed to "Activities would be well planned" in the preferred form. Having separate actual and preferred forms of this school-level environment instrument enables several interesting research applications analogous to those completed using classroom-level environment scales (see Fraser, 1986a). These could include investigations of differences between actual and preferred school environments, person-environment fit studies of whether teachers or students function better in their preferred school environment, and practical attempts to improve school environments in ways which make them more congruent with teacher preferences.

Because the environment described in the original form of the WES is that of any work milieu, there was scope in the present studies to improve the instrument's face validity for use specifically in measuring teachers' perceptions of their school environment. For this reason, the present investigations made use of a version of the WES in which the word

"people" was changed to "teachers", the word "supervisor" was changed to "senior staff" and the word "employee" was changed to "teacher".

Validation of WES

Moos (1981) reported validation data for the original form of the WES based on its administration to a sample of 624 employees and supervisors in a broad range of work groups (e.g., salesmen, nurses, drivers, maintenance workers) in the U.S. Table 2 summarizes Moos's results for this sample for each scale's internal consistency (alpha reliability coefficient) and the discriminant validity (using the convenient index of the mean correlation of a scale with the other nine scales).

Insert Table 2 about here

The WES was used for the first time specifically with school teachers in a study conducted among Australian science teachers (Fisher & Fraser, 1983). The slightly modified version of the WES was administered to a sample of 114 science teachers in 35 secondary schools in Tasmania. This sample provided representative coverage of male and female teachers, of teachers with varying amounts of teaching experience, of teachers in state government schools and independent schools, and of schools in city and country areas. Table 2 shows that the KR-20 coefficients for the different WES scales ranged from 0.60 to 0.85 for this sample of Australian science teachers. These figures are generally only a little lower than Moos's estimates shown in the same table. The magnitudes of the mean correlation of a scale with the other nine scales ranged from 0.16 to 0.41 for the sample of science teachers. These values are a little lower than those (namely, 0.18 to 0.57) obtained by Moos, thus

suggesting better discriminant validity. Overall the data in Table 2 indicate that the WES scales display satisfactory internal consistency and measure distinct, although somewhat overlapping, aspects of school environment.

Further validation data were generated in the present study. The new sample was broader than the previous one in that it covered non-government as well as government schools and it included elementary schools (Grades K-6), high schools (Grades 7-10), district high schools (Grades K-10) and secondary colleges (Grades 11-12). Furthermore, whereas the previous study involved only the actual form of the WES, the new sample responded to both the actual form (what the environment is actually like) and the preferred form (what teachers would prefer the environment to be like). Table 3 describes this sample in terms of the number of schools and teachers involved from each school type. The total sample consisted of 34 schools, with 599 teachers responding to the actual form of the WES and 543 teachers responding to the preferred form. Teachers of a wide variety of school subjects were included among the secondary school sample. These data were collected during an evaluation of teacher professional development activities in Tasmania in 1984 (Docker, Fisher, & Hughes 1985).

Insert Table 3 about here

Table 2 reports internal consistency and discriminant validity statistics for the new sample for both the actual and preferred form of the WES. Also, because some applications of the WES are likely to involve the school mean rather than the individual teacher as the unit of

analysis, data are reported separately for individuals and school means. It is noteworthy that, as seen in Table 2, the reliability for school means typically is greater than 0.9 for both the actual and preferred forms of WES scales. Overall, the data for teachers in Table 2 compare favorably with those obtained with the previous samples of non-teachers and attest to the internal consistency and discriminant validity of the WES in either its actual or preferred forms and with either the individual teacher or the class mean as the unit of analysis.

Another desirable characteristic of the actual form of a school environment instrument is that it is capable of differentiating between the perceptions of teachers in different schools. That is, teachers within the same school should perceive it relatively similarly, while mean within-school perceptions should vary from school to school. This characteristic was explored for each scale of the WES's actual form for the new sample of 599 teachers in 34 schools. A one-way ANOVA was performed for each scale, with school membership as the main effect. It was found that each scale differentiated significantly ($p<0.001$) between schools and that the eta^2 statistic (an estimate of the proportion of variance in WES scores attributable to school membership) ranged from 0.18 for Autonomy to 0.40 for Innovation or Physical Comfort.

Differences Between School Types

The main question explored with the available WES data involves differences between school types. When profiles of WES scale means were sketched for the various school types listed in Table 3, reasonable similarity was found for preferred environment scales. That is, there was a fair degree of agreement among teachers in different types of schools as to what they would prefer their school environments to be

like. In contrast, teachers' perceptions of their actual school environments varied markedly with school type.

Because the samples of non-government schools consisted of comparatively small numbers (only 22 primary teachers in 2 schools and 76 secondary teachers in 4 schools), it was considered that valid inferences about differences between government schools and independent schools would not be possible. Consequently, only the four types of government schools were compared in this study. Figure 1 illustrates the differences between the profiles of mean actual environment scores for government primary schools (108 teachers in 9 schools), government high schools (147 teachers in 7 schools), government district schools (108 teachers in 6 schools) and government secondary colleges (138 teachers in 6 schools).

Insert Figure 1 about here

Differences between the four types of schools were tested statistically for each WES scale. The first step involved the performance of a one-way MANOVA in which the set of 10 environment scales constituted the dependent variables and the type of school (high, elementary, district, secondary college) constituted the main effect. Because the multivariate test using Wilks' lambda criterion was statistically significant ($p<0.01$), the univariate ANOVA results were examined for each of the 10 scales individually. Because differences between school types were significant ($p<0.05$) for all 10 scales, Tukey's post hoc procedure was used with each scale in turn to establish the

statistical significance of pairwise comparisons between each school type on each climate dimension. These findings are summarized in Figure 1, which is a simplified plot in which any nonsignificant differences between school types are represented by a zero difference by averaging the relevant scores.

The profiles depicted in Figure 1 reveal some clear general patterns of differences in the favorableness of the classroom environments in the four types of schools. The most striking pattern is that the climate in elementary schools emerged as more favorable than the environment of any of the other three types of schools on most of the WES scales. In fact, elementary schools were perceived more favorably than all of the other three school types on seven dimensions: elementary schools were viewed as having greater Involvement, Staff Support, Autonomy, Task Orientation, Clarity, Innovation and Physical Comfort and less Work Pressure. Also elementary schools were perceived as having greater Peer Cohesion than high schools and secondary colleges (but not district schools) and greater Control than secondary colleges (but not high schools or district schools). Moreover, the differences between elementary schools and other types of schools appear greatest in what Moos refers to as System Maintenance and System Change dimensions. In particular, elementary schools were most distinctive in terms of their greater Innovation and Physical Comfort and their smaller Work Pressure relative to the other types of government schools.

Although marked differences emerged between elementary schools and the other three school types, overall there was much similarity in the climates of high schools, district schools and secondary colleges. On the six scales of Involvement, Staff Support, Autonomy, Task Orientation,

Innovation and Physical Comfort, no significant differences emerged between these three types of school. On the other hand, district schools were characterized by greater Peer Cohesion than either high schools or secondary colleges; secondary colleges were perceived as having less Clarity and less Control than either high schools or district schools; and Work Pressure was greater in high schools than in either district schools or secondary colleges.

Conclusion

This paper has included a description of the use of the Work Environment Scale (WES) to measure teachers' perceptions of 10 important psychosocial dimensions of their school environment. Noteworthy features of this instrument include its adequate coverage of Moos's three general categories for conceptualizing all human environments, its face validity for use in schools and its economy (in that teachers take only 10 to 15 minutes to respond to all 10 scales). Administration of the WES to samples of teachers has attested to each scale's internal consistency and discriminant validity in either its actual or preferred forms and with either the individual teacher or the class mean as the unit of analysis. Also the actual form of each scale was found to differentiate between the perceptions of teachers in different schools.

The paper's main purpose was to report an application of the WES in which the school climates of different types of schools were compared and contrasted. The major finding was that elementary schools were found to have a more favorable school environment than high schools, district schools or secondary colleges on most WES scales, but especially in terms of amount of innovation, the physical surroundings and work pressure.

It is hoped that educational researchers and teachers will make use of the widely applicable and extensively validated WES in assessing the important concept of school environment and in pursuing research and practical applications related to school-level environment which are analagous to those previously completed for classroom-level environment (Fraser, 1986b). For example, assessments involving the WES could form the basis for studies of the effects of the school environment on such outcomes as teacher job satisfaction or student achievement or morale. Further investigations might be made of the links between classroom-level and school-level environment (Fraser & Rentoul, 1982). The WES is likely to provide a useful source of criteria in the evaluation of innovative or alternative educational provisions (Anderson, Walberg & Welch, 1969; DePiano, 1980; Fraser, 1979; McClure, Pratola, Ellis, Fitzritson, McCammon, & Felder, 1980; Fraser, Tobin & Williamson, in press). It is conceivable that teachers might use assessmments of their perceptions of actual and preferred school environment as a basis for discussion of improvements in their school environments which would reduce actual-preferred discrepancies (Fraser, 1981c; Fraser & Fisher, 1986; Moos, 1981).

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Scale Name

Internal Consiste

Scale

Unit
of
Analys

TABLE 3
Number of Teachers in each Type of School

School Type	Number of Schools	Number of Teachers	
		Actual	Preferred
Government Schools			
Elementary (K-6)	9	108	107
High (7-10)	7	147	121
District (K-10)	6	108	99
Secondary College (11-12)	6	138	116
	28	501	443
Non-government Schools			
Elementary (K-6)	2	22	22
Secondary (7-12)	4	76	78
	6	98	100
Totals	34	599	543

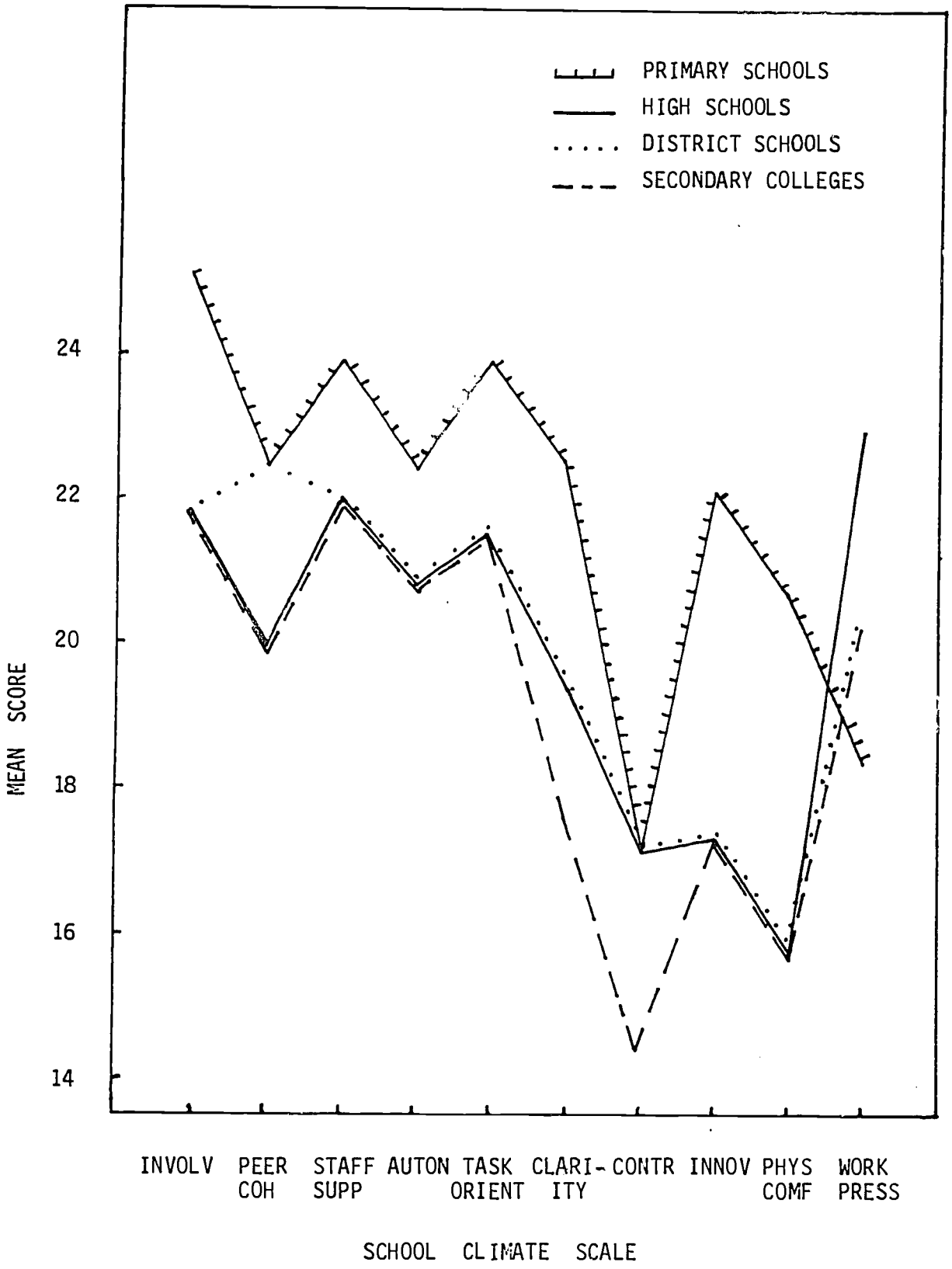

FIGURE 1: Differences in the Environments of Four Different Types of Schools