Student School Climate Perceptions as a Measure of School District Goal Attainment

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Abstract
The purpose of this study was to analyze one high school district's use of student survey data to measure district-wide goal achievement. The premise was that student school climate factors may serve as a more robust measure of district goal attainment than the district's use of discrete item analysis. The data were gathered from archived biennial surveys of students between 1999 and 2005. Factor analysis was used to reduce the data from each survey cycle into composite variables. Component items for each factor scale were then analyzed over the four survey cycles. The study identified four key student school climate factors - academic learning experience, overall school satisfaction, communication, and environmental experiences – that appear to serve as more effective measures of the district goals.

Introduction

It is common to find school districts advancing the cause of improving school effectiveness by identifying district-wide goals. But such efforts may be of little value if goal attainment measures are not equal to the challenge. School district goals are usually broadly stated, suggesting that there are complex relationships at work within component schools. This complexity is compounded by the reality that district goals are usually locally generated and reflect beliefs, culture, and infrastructure unique to the district. Thus, measuring goal attainment in many school districts may not be an easy task. This study hypothesized that one way to investigate the complex relationships suggested by broadly state school district goals is through the use of district-wide school climate data generated from student perceptions.

Purpose

The purpose of this study was to investigate whether student survey perception data collected every two years between 1999 and 2005 in one suburban district of seven high schools could be used to effectively measure attainment of locally developed district-wide goals. Specifically, the study sought to answer two questions. First, can student questionnaire data aggregated from seven high schools in each of four survey cycles be used to identify viable school climate factors useful in assessing attainment of the district-wide goals? Second, do these same school climate factors, when treated as four sets of cross-sectional data and then compared over time, provide a more robust measure of goal attainment than the use of discrete item analysis?

Research Literature

Hoy and Feldman (2003) have noted the value of using survey generated school climate data to evaluate stated school goals. However, as Anderson (1982) found, it is much more difficult to measure school climate on a district-wide basis. If school climate is valuable in measuring school level goals then it is important to probe whether district-wide school climate data can serve effectively to measure district-wide goals. This study sought to address this challenge by looking at the relationship between the district-wide goals of one high school district and the district-wide perceptions of students as they are reflected in school climate factors.

Student surveys have been found to be effective in investigating the complex nature of school climate (Freiberg & Stein, 2003; Griffith, 1997, 1998, 2000; Stevens & Sanchez, 2003). Assuming, as Fullan (2005) and others have suggested, that schools, as effective organizations, should set goals and measure results, probing student perceptions of school climate on a district-wide basis may provide one source of insight into the effects of set goals. However, where surveys have been used in the process of measuring goal attainment, as was the case with the high school district in this study, the results often reflect only the use of cross-section data gathered periodically to get a fix on point-in-time perceptions of staff, parents, community members, and sometimes students (Mertens, 1998). Analysis of data in these cases is usually limited to focusing on frequency of responses to individual questionnaire

items on Likert-type scales. While this approach has merit, it may miss an opportunity to investigate the aggregate complex relationships (Ellis, 1988) that exist between the many item variables in a survey. An alternative to item analysis is the use of factor analysis. If a district-wide student perception survey consists of a large number of items reflecting a desire to measure district goal attainment, it may be that school climate factors district-wide can be extracted to provide a more robust insight into the relationship between district-wide goals and student perceptions than do a review of individual survey items.

For purposes of this study, school climate was defined to include shared perspectives about what is happening, academically, socially, and environmentally, within the school routine (Freiberg, 2003; Hoy & Feldman, 2003; Hoy & Miskel, 1996). Hoy, Hannum and Tschannen-Moran (1998) have noted that climate within an organization has an enduring descriptive quality. If this is true, Anderson's (1982) concern that measuring climate district-wide is difficult may be overcome by investigating whether district-wide student perception data, generated independently from four discrete survey cycles over several years with a changing student population, and subjected to factor analysis, consistently generate common district-wide climate factors. If complex school district-wide climate factors can be extracted from student perception data, then perhaps these complex factors can be more useful in addressing the complex nature of performance on district-wide goals over time than relying on simple item analysis methods.

Data Source Background

The archived data for this study were drawn from one suburban Southern California high school district with six comprehensive high schools and one continuation high school serving a diverse student population of 13,000 plus students. Approximately 40% were Hispanic/Latino, 35% White, and 11% Asian when the survey data were gathered.

In 1989, the district board of trustees, with input from students, staff, parents and the community, adopted seven goals as part of a *District Goals and Objectives Biennial Report*. The goals focused on a) student academic achievement, b) student attendance and behavior, c) quality of facilities and equipment, d) fiscal management of resources, e) effective communication, f) recognition of staff, students, parents and community members, and g) quality

and effectiveness of school and district support characteristics.

The district used item analysis from biennially administered student surveys as one source of data to evaluate attainment of four of the seven district goals. This study used only the data from 1999 through 2005 because these data were complete enough to be analyzed using factor analysis methods. During this time period there were no changes in the questionnaire that consisted of 50 five-point Likert-type items – Yes, most of the time; Yes, some of the time; No, seldom; No, not at all; Does not apply (see Table 1).

Table 1
Survey Cycles and the Number of Student Respondents

Year	Questionnaire Items	Student Population	Number of Students Responding	Percent Response
1999	50	11,276	9,942	88
2001	50	12,308	10,106	82
2003	50	13,078	11,285	86
2005	50	13,784	11,880	86
Total		50,446	43,213	86

Methods

Respondent results for each survey cycle represented cross-sectional survey data (Creswell, 1994). It is important to note that since the survey was given every two years many students responded twice during their four years in high school and as a result during any given survey cycle half of the students had probably taken the survey two years before and half were responding for the first time.

Because of the large number of student survey questions (50) developed and used by the district in this study and the very high percentage of student participation in the biennial process, on average about 86% of the total student population, there was reason to believe that factor analysis results from each survey cycle would provide a robust picture of how students view their high

school experience on broad fronts (school climate). Also, it was anticipated that the school climate factors extracted from each cycle could be compared with results from the other three survey cycles to determine if the same climate factors emerged consistently over the four cycles. If there were climate factors that emerged in each of the four cycles, the complex nature of the variables in these school climate factors might shed light on attainment of district goals.

Study procedures involved five steps. *Step 1* – The seven district goals were reviewed to identify how survey items were being used as measures prior to the study. *Step 2* – The questionnaires were reviewed with the goal of identifying whether there were observable school climate factors/ constructs consistent with research findings (Freiberg & Stein, 2003; Hoy & Feldman, 2003; Hoy & Miskel, 1996) imbedded within the 50 items. *Step 3* – Factor analysis was used to explore the alignment between the observable questionnaire items and research suggested factors for measuring school climate. *Step 4* – Climate factors common to all four survey cycles were analyzed to track the performance of component items over the course of the four cycles. *Step 5* – The factor analysis extracted climate factors were compared with the seven goals to determine if they could serve as legitimate measures of goal attainment.

Procedures

Step 1: District Goals and the Use of Student Survey Data

Results from 24 (48%) of the 50 Likert-type items in the district student survey had previously been used, along with other district-wide data, in assessing district attainment on portions of four of the seven district goals. As noted in Figure 1, three goals were not designed to use student survey data as part of goal attainment measurement. Also of note is that no survey item was used more than one time for any measurement purpose. This was viewed by the researcher as possibly limiting the value of questionnaire items. Additional review suggested that many of the 26 unused items might also be useful in measuring goal attainment. Several of the 50 items appeared useful as measures on multiple goals.

District Goal	Number of student survey items used to measure attainment
Goal 1: District will provide high quality curricular and co-curricular programs as measured by student achievement data.	1
Goal 2: District will provide the environment and programs so that students will meet or exceed district standards in attendance and personal behavior.	None
Goal 3: District will provide and satisfactorily maintain adequate and secure physical facilities, grounds, and equipment.	4
Goal 4: District will provide sound management of district resources.	None
Goal 5: District will provide effective internal and external communications.	4
Goal 6: District will properly recognize students for outstanding accomplishments.	None
Goal 7: District will provide programs and implement decisions to promote student satisfaction with the support, quality, and characteristics of the school/district.	15

Figure 1. Seven school district goals and the number of student survey items out of 50 that were being used to measure goal attainment at the time of the study.

Step 2: Possible School Climate Factors Imbedded within the Questionnaire Items

Between 1999 and 2005 student survey results were reported using frequency data (number and percent). In reporting results for individual survey items a satisfaction level of 70% positive – Yes (most of the time) and Yes (some of the time) – was considered by the district as an indicator that the expectations of the goal measured were being met. On further review it was evident that at no time had the district attempted to expand the use of student survey data to measure goal attainment beyond Goals 1, 3, 5, and 7. Also, the data had not been analyzed to identify school climate factors for measurement purposes.

At another level of survey review, it appeared that the large number of survey items suggested the possibility that there were internal groupings of questions that could serve as school climate factors for the purpose of assessing goal attainment. These observable constructs appeared consistent with climate

constructs suggested by research (Borger, Lo, Oh, & Walberg, 1985; Ellis, 1988; Griffith, 1997, 1998; Stevens & Sanchez, 2003) and suggested potential groupings into eight themes of satisfaction: a) grounds, facilities, and safety; b) communication of academic and non-academic information; c) instructional experience in the classroom; d) quality of teachers and teaching; e) respect of teachers, staff, and other students; f) satisfaction with individual course subjects; g) discipline policies and practices; and h) overall satisfied with school.

Step 3: Factor Analysis

A challenge in this study was to determine how much the individual survey items aligned with imbedded themes observed by the researcher and with research suggested constructs for measuring school climate. If school climate is an "aggregate of indicators" (Ellis, 1988, p. 3) then climate constructs should reflect factors that speak to the complex ways that students perceive their high school experience. Factor analysis was used to explore this alignment and determine if multiple questions would group on common factors. The objective was to reduce the 50 item variables to a smaller number of composite variables (Morgan & Griego, 1998).

Step 4: Tracking the Performance of Factor Scale Items

Once the factor scales common to each survey cycle were determined, the component items of each scale (individual questionnaire items) were then compared to identify the student satisfaction levels for each of the four survey cycles. This provided a way of tracking student perceptions and gauging the validity of each factor scale. This process involved analysis of the component items for each survey cycle factor and comparing it with results from the other three survey cycles.

Step 5: Comparing Factor Constructs with District Goals

Finally, the extracted factors were weighed against the stated district goals to determine usefulness as measures of goal attainment. This process sought to ascertain whether extracted factors suggested value in measuring individual goal attainment or in measuring attainment of multiple goals. Also of interest was whether factors could be linked with other factors to provide a more robust assessment of goal attainment.

Findings

Review of the findings for this study is separated into two sections. The first provides a review of the four factors extracted from the survey data. The second is an assessment of the value of the factors as measures of goal attainment.

Four Factors

Factor analysis of survey data from 1999 – 2005 resulted in teasing out four factors common to the results of all four survey cycles. Although additional factors were extracted they were not deemed useful because there was not enough consistency across the four survey cycles. Loadings below .30 were ignored (Kline, 2002). The four extracted factors that were the same across all four survey cycles are referred to here as climate factor scales and are summarized under the following descriptors:

1. Instructional Experience
2. Overall Experience
3. Information Communication
4. School Environment

Chronbach's alpha was computed for each scale (see Table 2) to determine reliability. Except for two scales in 1999, all other scales had alphas greater than .70, indicating acceptable internal reliability (Pedhazur & Schmelkin, 1991). Although 1999 factor scales 3 (Information Communication) and 4 (School Environment) had alphas below .70 (.61 and .58 respectively), they probably reflected the smaller number of items loaded. Since the intercorrelation of items in each scale exceeded .25, the lower alphas were acceptable (Griffith, 1998; Nunnally, 1978). For purposes of this study, only items in each factor with loading correlations at or above .30 were retained (Kline, 2002).

Climate Factor Scale 1: Learning Experience. Climate Factor Scale 1 (Learning Experience) accounted for 19%, 28%, 28%, and 29% of total item variance in each survey (1999 through 2005) respectively. The loadings (see Table 3) indicate correlations of the variables within this factor that range from a low of .338 (Satisfied with the quality of mathematics classes) in 1999 to a high of .710 (Satisfied with teacher grading practices) in 2005. All loading correlations are above .30 and therefore meet Kline's (2002) criteria of acceptance.

Learning experience, with its inclusion of items related to perceptions about teachers, teaching practices, teacher treatment of students, and learning

Table 2

Student School Climate Scales and Internal Reliability Data for Four Survey Cycles

	1999 survey cycle			2001 survey cycle		
Factor Scale	Number of Items	Alpha	Item Total Correlation	Number Of Items	Alpha	Item Total Correlation
1. Instructional Experience	9	0.79	0.30	10	0.88	0.43
2. Overall Experience	7	0.71	0.26	8	0.80	0.34
3. Information Communication	5	0.61	0.25	5	0.77	0.40
4. School Environment	4	0.58	0.26	6	0.78	0.38

	2003 survey cycle			2005 survey cycle		
Factor Scale	Number of Items	Alpha	Item Total Correlation	Number Of Items	Alpha	Item Total Correlation
1. Instructional Experience	10	0.88	0.43	9	0.87	0.43
2. Overall Experience	7	0.80	0.37	9	0.86	0.40
3. Information Communication	5	0.77	0.40	6	0.79	0.38
4. School Environment	5	0.78	0.41	5	0.78	0.41

environment, appears to be aligned with school climate research (Borger et al., 1985). Hoy et al. (1998) have suggested that one aspect of a healthy school climate is "teacher professionalism" which represents both the instructional and social relationship between teacher and student.

Analysis of items loaded into Climate Factor Scale 1 provides an indication of respondent satisfaction each year. Regardless of loading correlations noted in Table 3, the percent of satisfaction expressed is a reflection of frequency data reported as a percent of combined responses "Yes (some of the time)" and "Yes (most of the time)" (see Table 4).

Results indicate mixed satisfaction levels between 1999 and 2001 (see Figure 2). By 2005 the items show improved satisfaction to a point where

Table 3
Intercorrelation Loadings for Climate Factor Scale 1 – Learning Experience

Factor Scale Items	Intercorrelation Loadings by Year			
	1999	2001	2003	2005
Satisfied with most teachers	.691	.709	.705	.676
Satisfied with teacher grading practices	.676	.700	.698	.710
Satisfied with teacher homework practices	.582	.605	.637	.662
Satisfied with quality of teaching	.602	.664	.672	.628
Treated respectfully by most teachers	.573	.653	.625	.572
Satisfied with learning environment	.422	.559	.531	.454
Satisfied with quality of English classes	.442	.519	.517	.496
Satisfied with quality of mathematics classes	.338	.384	.424	.428
Satisfied with quality of courses taken overall	.400	.398	.413	.463

levels range between 75% and 89% satisfied. Six of the nine items in the scale had been previously used by the district as discrete pieces of data for purposes of measuring goal attainment.

Climate Factor Scale 2: Overall High School Experience. The loadings for this factor appear to address school on a broader front than did the loadings on Climate Factor Scale 1. Here the loading items address the complexity of student perceptions that drive attitudes about overall experience in high school (see Table 5). The factor loadings accounted for 5% of total item variance in each survey respectively.

The component items for Overall High School Experience reflect what Stevens and Sanchez (2003) indicate is the "global construct of school effectiveness" (p. 126) because the focus is on the relationship between the many facets of a student's daily experience in school. Also, the component items in this factor reflect Frieberg's (1989) finding that climate is a reflection of multiple perspectives.

Table 4

Percent of Student Satisfaction for Climate Factor Scale 1 (Learning Experience) Items

Factor Item	Percent of Student Satisfaction			
	1999	2001	2003	2005
*Satisfied with most teachers	77	75	82	86
*Satisfied with teacher grading practices	65	68	74	78
*Satisfied with teacher homework practices	64	65	69	75
*Satisfied with quality of teaching	67	72	80	84
*Treated respectfully by most teachers	83	81	86	89
*Satisfied with learning environment	73	75	83	88
Satisfied with quality of English classes	63	63	75	79
Satisfied with quality of mathematics classes	63	63	75	79
Satisfied with quality of courses taken overall	76	78	85	88

Note. * Individual item used by the district as a measure of Goal 7 attainment only.

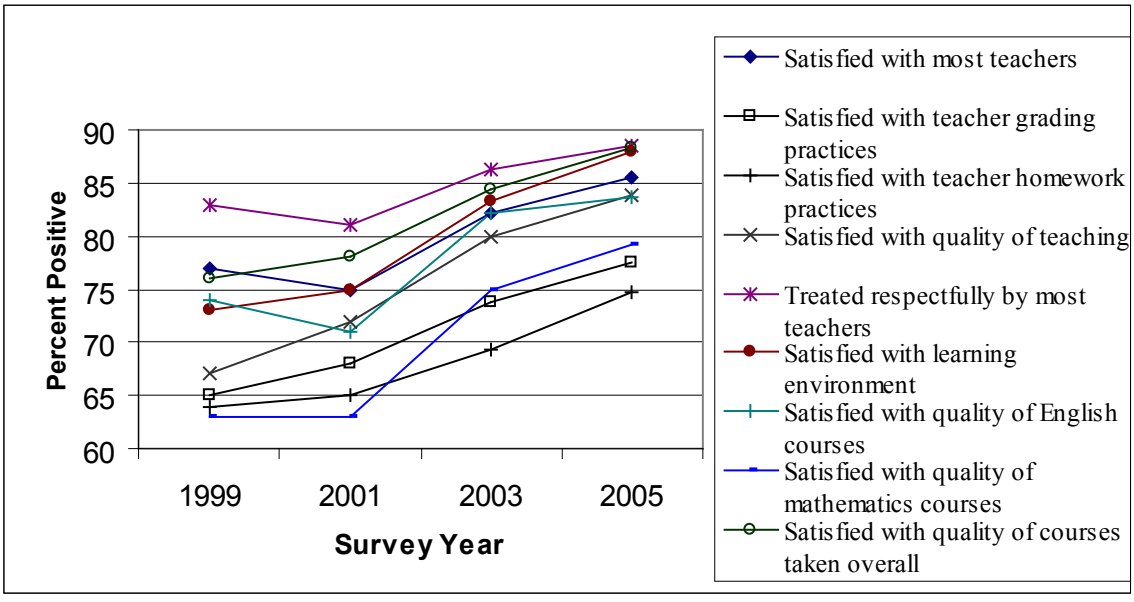

Figure 2. Climate Factor 1 – Satisfaction levels for Learning Experience over four survey cycles.

Table 5
Intercorrelation Loadings for Climate Factor Scale 2 – Overall High School Experience

Factor Scale Items	Intercorrelation Loadings by Year			
	1999	2001	2003	2005
Satisfied with overall high school experience	.606	.537	.513	.560
Finds school a positive experience	.570	.495	.488	.459
Given option, choose to attend current school	.459	.486	.452	.471
Satisfied with extra and co-curricular activities	.472	.523	.509	.401
Receives adequate recognition & appreciation	.314	.411	.372	.405

The satisfaction levels of student responses to the five factor components provide a picture of consistent change in student perceptions over time (see Table 6; Figure 3). Satisfaction levels have improved for each survey cycle since 1999. These results are not aligned with satisfaction levels for Factor 1 (Learning Experience) which were mixed between 1999 and 2001 before improving in 2003 and 2005 (see Figure 2). The comparison between satisfaction levels for Learning Experience and Overall High School Experience may indicate that students differentiate between climate factors that involve classroom experiences and their experiences overall, which include many other activities. Only two of the five component items for this climate factor were previously used by the district to measure attainment of Goal 7.

Overall experience as a school climate factor suggests perceptions based on a mix of social, personal, and academic experiences of students. This is consistent with research that has found school climate to reflect the complex interrelationships of a broad range of school characteristics (Frieberg, 1989; Freiberg & Stein, 2003; Hoy & Miskel, 1996).

Table 6

Percent of Student Satisfaction for Climate Factor Scale 2 (Overall Experience) Items

Items	Percent of Student Satisfaction			
	1999	2001	2003	2005
*Satisfied with overall high school experience	70	73	80	84
Finds school a positive experience	52	61	75	83
Given option, would choose to attend current school	65	66	71	74
*Satisfied with extra and co-curricular activities	65	71	77	82
Receives adequate recognition and appreciation	52	58	64	69

Note. * Item is used by the district as a measure of Goal 7 attainment only.

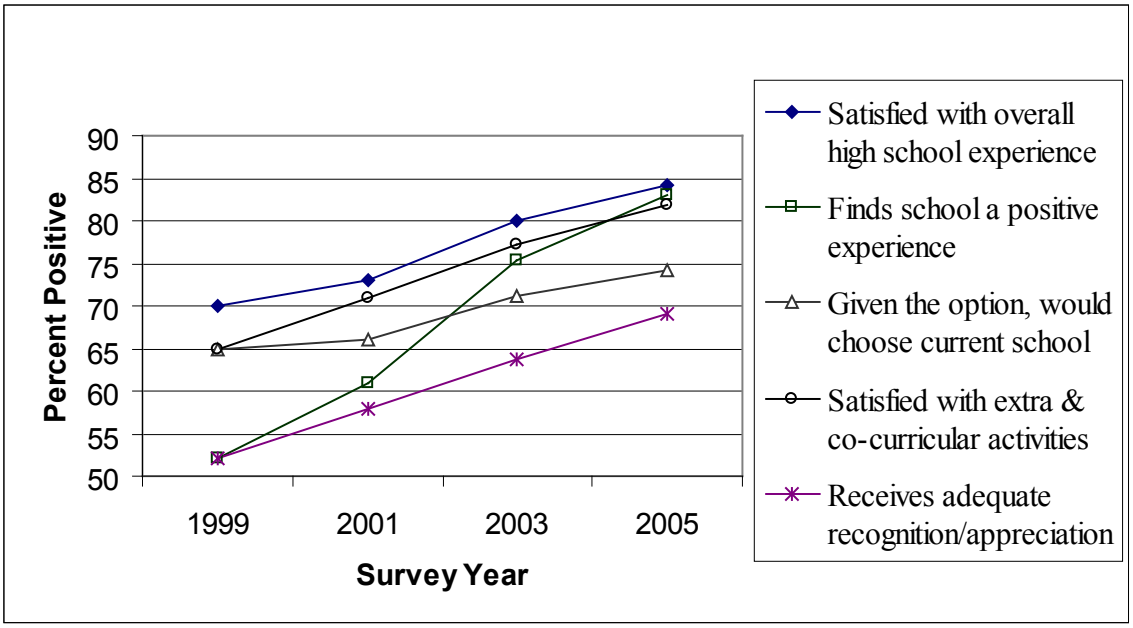

Figure 3. Climate Factor 2: Satisfaction levels for Overall High School Experience over four survey cycles.

Climate Factor Scale 3: Information Communication. The initial review of the district survey instrument indicated that several items reflected a communication construct identified by research as a school climate factor. This factor identifies five questionnaire components that highlight student perceptions about school communication, including academic and non-academic information. Loadings for this factor accounted for 3%, 3%, 4%, and 6% of the total item variance respectively for the survey cycles between 1999 and 2005 (see Table 7).

Table 7
Intercorrelation Loadings for Climate Factor Scale 3 – Information Communication

Factor Scale Items	Intercorrelation Loadings by Year			
	1999	2001	2003	2005
Informed about courses needed for post-graduation plans	.711	.706	.709	.709
Informed about courses needed for graduation	.736	.675	.688	.680
Informed by teachers about attendance	.479	.615	.647	.657
Informed by teachers about grades and progress	.527	.523	.572	.547
Informed about school programs, plans, activities	.396	.558	.586	.623

When the component items for Factor 3 are viewed over time, the satisfaction levels have increased each year for each component item (see Table 8). Four of the five component items had been used by the district to measure attainment of Goal 5.

The components in Climate Factor Scale 3 suggest the value of communication at multiple levels within the school. The components for this element of school climate improved from 1999 when the satisfaction levels for all five component items were below the district's 70% positive benchmark to 2005 when satisfaction levels for all were above 70% (see Figure 4). Communication is consistently identified in school effectiveness research

Table 8

Percent of Student Satisfaction for Climate Factor Scale 3 (Information Communication) Items

Items	Percent of Student Satisfaction			
	1999	2001	2003	2005
Informed about courses needed for post-graduation plans	48	55	68	73
*Informed about courses needed for graduation	67	72	86	90
*Informed by teachers about attendance	55	56	65	71
*Informed by teachers about grades and progress	61	69	76	80
*Informed about school programs, plans, and activities	60	71	80	83

Note. * Items used by the district as a measure of Goal 5 attainment only.

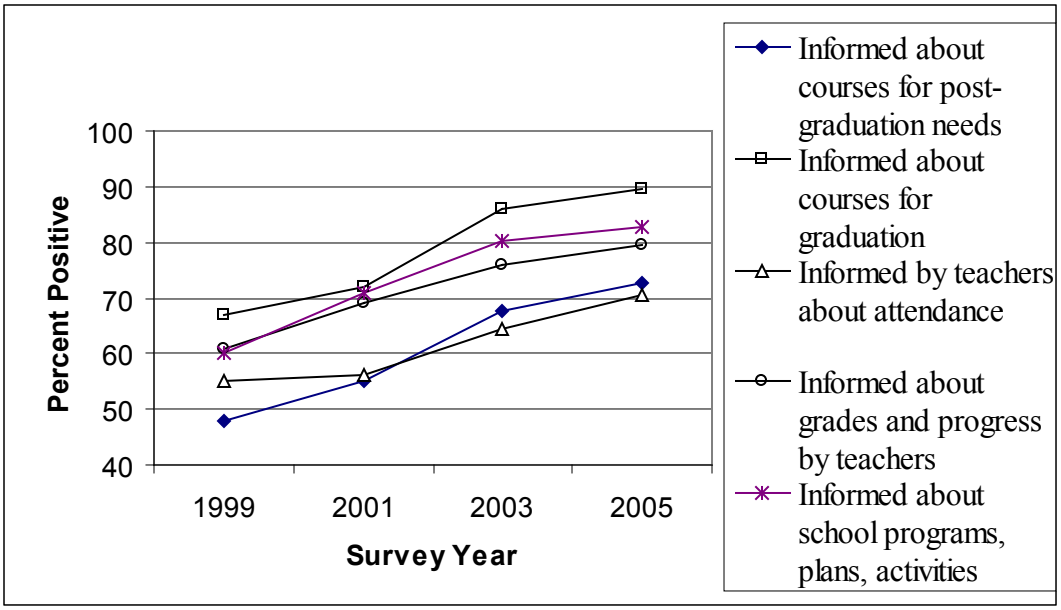

Figure 4. Climate Factor 3: Satisfaction levels for Information Communication.

(Griffith, 1998; Stevens & Sanchez, 2003) as an important ingredient in school climate.

Climate Factor Scale 4: School Environment. This factor concerns student perceptions about safety, discipline practices, and quality of facilities and equipment. Considering the high premium students place on their academic

and overall school experience (Climate Factors 1 and 2), the intercorrelation of the scale variables in Factor Scale 4 (see Table 9) make sense. Both academic and activity experiences of students take place within the context of school facilities and under the supervision of staff. The mix of component items ranging from buildings, to grounds, to equipment, to safety, and to discipline policies and practice suggest, as noted by Borger et al. (1985), that school climate involves perceptions about "a safe, orderly environment where rules are clear" (p. 15). Griffith (1997, 1998, 2000) found that student perceptions of facilities and safety are important components of school climate constructs. The intercorrelation loadings accounted for 3% of the total item variance for each the survey cycles between 1999 and 2005.

From 1999 through 2005 it is evident that there was a substantial change in satisfaction levels (see Table 10). Where all but two of the six factor component items were below 70% positive in 1999, all six were at or above 80% positive by 2005 (see Figure 5). Three of the factor items had been used by the district as Goal 3 attainment measures.

Table 9
Loadings for Climate Factor Scale 4 – School Environment

Factor Scale Items	Intercorrelation Loadings by Year			
	1999	2001	2003	2005
School buildings & grounds in good condition	.655	.671	.689	.635
School buildings & grounds adequate & safe	.603	.720	.688	.648
School is a safe place to be	.468	.669	.570	.604
School equipment adequate & in good condition	.464	.603	.610	.597
Discipline policies & practices communicated well to students	.690	.455	.399	.518
Discipline policies & practices consistently applied	.754	.422	.447	.528

School Climate Constructs as Measures of Goal Attainment. Taken together, the four school climate factors identified within the student perception data of this study are consistent with school climate research (Borger et

al., 1985; Ellis, 1988; Griffith, 1997, 1998; Stevens & Sanchez, 2003). However, as Hoy et al. (1998) pointed out, climate within an organization is a descriptive quality. Because each school has its own personality or culture,

Table 10

Percent of Student Satisfaction for Climate Factor Scale 4 (School Environment) Items

Items	Percent of Student Satisfaction			
	1999	2001	2003	2005
*School buildings and grounds are in good condition	60	77	79	87
*School buildings and grounds adequate and safe	73	85	87	92
School is a safe place to be	76	83	88	91
*School equipment adequate and in good condition	56	69	74	82
Discipline policies and practices communicated well to students	62	74	80	82
Discipline policies and practices consistently applied	55	73	78	80

Note. * Items used by the district as goal attainment measures

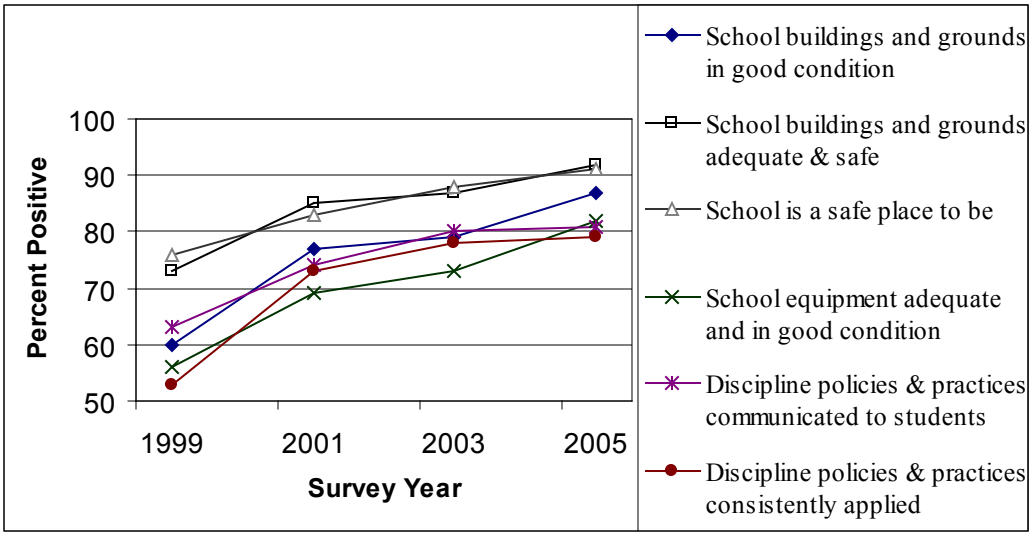

Figure 5. Climate Factor 4: Percent of student satisfaction with School Environment over four survey cycles.

school climate descriptions speak to the "relatively enduring quality of the entire school" (p. 337). Given this premise as a point of departure for analyzing the four school climate factors extracted in this study, it is reasonable to consider their value within the context of the home-grown goals that have been established by the district. Figure 6 identifies the links between the four climate factors and the intent of the seven district goals. It is important to remember that 24 of the 50 student questionnaire items were used in goal attainment measurement (see Figure 1) prior to this study. Climate factors generated in this study include 25 items. Of these 25, only 15 were part of the 24 items previously used by the district as attainment measures.

The four climate factors of learning experience, overall high school experience, information communication, and school environment provide parsimonious insight into the seven district goals when compared with the use of individual questionnaire items. While individual student questionnaire items that were used to evaluate goal attainment served the intended purpose well, it appears that there are several questionnaire items from among the 25 previously unused items that could also be useful as goal attainment measures. The four climate factors of this study incorporate a broad spectrum of questionnaire items to suggest climate constructs that can serve as multiple measures of goal attainment. These four constructs describe the complex relationships within school climate that have bearing on student perceptions of practices and on decisions that may be made by schools and the district in response to the guiding qualities of the district goals. Also, where the district was using student survey data to measure attainment on four goals, the four factor scales extracted in this study appear to be viable measures of all seven goals.

Conclusions

Factors and their component variables in this study suggest student attitudes about their high school experience are rooted in academic, overall experience, communication, and environmental encounters. As such, the factors reflect school climate constructs consistent with research. They also provide a framework useful for measuring district-wide goal attainment. School districts can set general and specific goals which can, in part, be measured using school climate perception data of high school students.

Climate Factors	Goals Implicated	Factor Implications for Goals
1. Learning Experience	Goal 1: Provide high quality curricular and co-curricular programs as measured by student achievement data. Goal 3: Provide and satisfactorily maintain adequate and secure physical facilities, grounds, and equipment. Goal 7: Provide programs and implement decisions to promote student satisfaction with the support, quality, and characteristics of the district.	The Learning Experience factor components focus on interaction between teacher and student within the learning environment. There are direct implications for measuring Goal 1 which previously used only one survey question. There would also appear to be implications for measuring Goal 3 because the learning environment is, in part, a function of facility and equipment issues. Six of the nine component items in this climate factor were previously used as measures of Goal 7. The factor suggests a good fit with measuring Goal 7 attainment.
2. Overall High School Experience	Goal 1: (see above) Goal 3: (see above) Goal 6: Properly recognize students for outstanding accomplishments. Goal 7: (see above)	The broad brush quality of Climate Factor 2 would appear to have implications for measuring attainment of Goals 1, 3, 6, and 7 because it speaks to a composite of items that address the quality of student experience on all fronts of a high school environment.
3. Information Communi-cation	Goal 1: (see above) Goal 2: Provide environment and programs so students meet district standards in attendance and personal behavior. Goal 5: Provide effective internal and external communications Goal 7: (see above)	This climate factor suggests the importance of communicating about academic progress, school activities, attendance, and graduation expectations. This mix of academic, social, and behavioral qualities of the school experience lends support for using the factor to measure goal attainment on several levels.
4. School Environment	Goal 1: (see above) Goal 2: (see above) Goal 3: (see above) Goal 4: Provide sound management of district resources. Goal 5: (see above) Goal 7: (see above)	With its emphasis on a combination of physical qualities of the school and the sense of safety, the School Environment factor is well suited to serve in measuring attainment of all but one of the seven goals. It is especially useful for measuring Goals 2, 3 and 4. Previously Goals 2 and 4 have not used any survey data for measurement purposes.

Figure 6. Each of the four factors identified serve as multiple measures of attainment for all seven goals.

Implications of Factor Scales for District Goal Attainment

A school district committed to broad long-term goals has made a commitment to evaluating effectiveness from multiple perspectives. By

assessing attainment of district-wide goals using multiple data sources, including student survey results, the district in this study acknowledged the complexity of variables implied by broadly stated goals.

The district in this study was using results from a biennial student survey to help measure goal attainment in four of seven district goals. These four goals focused on student achievement, quality of facilities and equipment, communication, and overall characteristics of the school/district. Of the fifty questions contained in the student survey, 24 items were being used to evaluate goal attainment. Certainly these 24 items were legitimate sources of data for assessment purposes since they were designed for such use. However, the four climate factor scales that emerged in this study suggest two conclusions. First, several survey items, in addition to the 24 items designated to measure goal attainment, were useful for measurement purposes. Second, school climate factor constructs are also useful measurement tools. The four extracted factors represent a framework for evaluating all seven goals, including goals not previously measured using student survey data – Goal 2 (attendance/student behavior), Goal 4 (use of fiscal resources), and Goal 6 (student recognition). It could be said that the district had been missing an opportunity to evaluate goal attainment at another level.

If it is assumed that the findings presented here reflect, in part, the results of efforts on the part of the district to address the intent of the district goals, then one conclusion is that over time there was an improvement in student perceptions on matters related to all seven goals. In this sense, the district appears to have responded over time to input from a student population that was in continuous transition. It is difficult to conceive of sustained improvement over six years if the district was not responding to feedback from data gathered to measure goal achievement. The confirming quality of the four climate factor scales may indicate it is valuable to consider student school climate data as variables in measuring district-wide goal attainment. What makes the factors in this study especially valuable is that they address school climate district-wide which Anderson (1982) found to be a difficult task.

In the case of the district in this study, long standing district-wide goals have been used to guide policies and decisions. The goals are complex and the district organization is complex. Data needed to adequately assess attainment were of equal complexity. Complex data require a multiple dimension approach to evaluation and the use of factor analysis helped to explore the meaning of

data generated by the large number of items in each student survey. The factors provide prudent and robust insight into student attitudes while at the same time providing insight into the credibility of policies and decisions related to the seven district goals.

The View Over Time

This study supports the value of measuring goal performance using multiple sources of cross-sectional data. The four climate factor scales that emerged reflect well on the use of student survey data to measure district-wide goal attainment. The data comparison over four survey cycles provided an opportunity to look at more robust results than would occur with point in time results only. This approach allows a school district to track the effectiveness of policies and decisions relative to established goals. Long-term goals imply long-term actions, assessment, and reaction in an effort to meet the intent of said goals. Only with the knowledge of results revealed by cross-sectional data are districts provided feedback that speaks to the issues of adjustment and fine tuning implied by decision making that is aligned with long-term goals.

The complexity of climate factor variables in this study emphasize just how the academic, social, organizational, and environmental routines of a high school are intertwined in the perceptions of students. The intercorrelations among the variables indicate school climate is tied to the larger complexities of school. High school student learning experiences are impacted by aggregated, not simply isolated, experiences.

School districts that set general goals to guide policy need to consider the value of student school climate data as one way of measuring attainment. District-wide climate data driven by student perceptions may be valuable in addressing the complexity suggested by such goals. But taking such action requires a commitment to maintaining goals and measurement methods for an equal period of time. The payoff is continuous feedback and an opportunity to observe the effects of fine tuning policies and decisions.

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