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ABSTRACT

The Schools for the 21st Century (C21) Consortium was created in 1988 to produce change within 30 schools in a zone of the Seattle School District. Changes in four areas--staff development, networking among the schools, school-community linkages, and school restructuring--were implemented under "School Focused Leadership," a move toward school-based management. This paper presents findings of a study that sought to: (1) categorize the kinds of decisions that school sites make; and (2) determine the effect of shared decision making on student achievement outcomes, both in terms of overall gain and ethnic gap reduction. To determine the extent to which "School Focused Leadership" was really occurring in the schools, a group of teachers on the C21 advisory council developed a questionnaire and administered it to teachers in 19 C21 elementary schools in 1992. A revised version was administered to teachers in 13 of the C21 schools in 1993. The data show a curvilinear relationship between shared decision making and student achievement. As the C21 schools moved at different rates toward participative decision making, they showed a drop in the ethnic gap reduction (EGR). As they reached a point of greater influence in decision making, EGR scores rose. The data are consistent with other research findings that have found that reduction in student outputs occur as change is initiated and that outputs increase as change is institutionalized. Three figures and one table are included. (LMI)

SHARED DECISION-MAKING AND STUDENT ACHIEVEMENT

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SHARED DECISION-MAKING AND STUDENT ACHIEVEMENT

Shared decision-making is an important, perhaps even the defining, component of school-based management. School-based management, although not a new concept, has recently become a movement of considerable size and strong advocacy. Evaluations of school-based management, however, have focused primarily on processes and on teacher outcomes, such as status and collegiality (Collins & Hanson, 1991). There is little evidence of school-based management's impact on student outcomes (Educational Research Service, 1991).

The objectives of the study are two:

1. To categorize kinds of decisions that school sites make.

2. To relate the degree to which decisions are shared to student achievement outcomes, both overall gain and ethnic gap reduction.

METHODS

In spring 1992, with the assistance of a district evaluator, a group of teachers (site coordinators from four of the district's site-based management schools) developed a 14-item shared decision-making questionnaire. The questionnaire asked respondents to rate the degree to which decisions were shared in the way:

1. Most decisions are made in this building
2. The building is staffed
3. The building budget is developed
4. Curriculum is determined
5. Students are assessed
6. Staff development is provided for
7. In which linkages with the community are established
8. Special programs are acquired, i.e., magnet, grants, etc.
9. In which innovation/risk-taking is encouraged
10. The 'building vision' and goals are determined
11. The role of the site council is established
12. My responsibilities as a staff member are defined
13. Networks with other groups, schools, agencies, etc. are established
14. An atmosphere of cooperation is established/enhanced.

The response scale consisted of five points:

1 = Not applicable in this building.
2 = Determined or identified by BUILDING ADMINISTRATION.
3 = Determined or identified by BUILDING ADMINISTRATION WITH SOME STAFF INPUT.
4 = Determined or identified by SHARED EFFORT OF ADMINISTRATION AND STAFF.
5 = Determined or identified JOINTLY BY STAFF, ADMINISTRATION, PARENTS, COMMUNITY (OR SITE COUNCIL).

The questionnaire was administered in both spring 1992 and spring 1993. In 1992, teachers in 19 of the district's elementary schools having some degree of site-based management completed the questionnaire. In 1993, the questionnaire was slightly revised (to the above form), and teachers in 13 of the same set of schools completed it.

To assess the internal consistency of the questionnaire, the authors calculated Cronbach's alpha coefficient, a function of the average inter-item correlation and the number of items on the questionnaire. Since the value of alpha was .90, we decided to use total questionnaire score as a measure of shared decision-making.

Regression analysis provided a method for exploring the relationship between schools' mean questionnaire scores and student achievement. Both linear and curvilinear relationships were considered, as were two types of achievement measure. The two types, which are described below, include an index of schools' contribution to overall achievement gain and a measure of their contribution to ethnic achievement gap reduction in the various subtest areas.

The authors used California Achievement Test (CAT) scores from spring 1992 and spring 1993 districtwide administrations to compute both measures for each of the District's elementary schools. Computation of the index of schools' contribution to overall achievement gain (OAG) consisted of three steps:

1. Compute average spring 1992 (pretest) and average spring 1993 (posttest) CAT scores for each grade (two through five) on all ten subtests (Word Analysis, Vocabulary, Reading Comprehension, Total Reading, Language Mechanics, Language Expression, Total Language, Mathematics Computation, Mathematics Concepts/Application, and Total Mathematics) for each elementary school.

2. Save residuals obtained from regressing schools' spring 1993 average on schools' spring 1992 average for each subtest and each grade.

3. Divide each residual score by its standard error to produce the standardized OAG for each subtest and each grade.

Computation of the measure of ethnic achievement gap reduction (EGR) was a parallel three-step procedure:

1. Compute average spring 1992 and average spring 1993 scores separately for minority and majority students in each grade on all ten subtests for each elementary school.

2. Save residuals obtained from regressing schools' spring 1993 difference between ethnic group means on schools' spring 1992 difference between ethnic group means for each subtest and each grade.

3. Divide each residual score by its standard error to produce the standardized EGR for each subtest and each grade.

Mandeville & Anderson (1987) and Ramey (1992, 1987) discussed the statistical rationale for this three-step procedure. O'Connor (1972) showed that the resulting measure for a school is an unbiased estimate of the schools' contribution to achievement gain (or, by extension, ethnic gap reduction) in that subject and grade.

RESULTS

The distribution of the total scores across schools is shown in Figure 1. Figure 1 also shows the distribution of the preceding year's shared decision-making scores. Note that the 1993 distribution shifted to the right, with a mean of 46.7 (s.d. = 5.6, N=13), compared with the 1992 distribution, which has a mean of 37.5 (s.d. = 6.3, N=19).

For each California Achievement Test subtest, schools' overall achievement gain (OAG) and ethnic gap reduction (EGR) scores correlated only moderately with their shared decision-making mean scores. However, plots of the OAG and EGR scores against shared decision-making mean scores revealed a curvilinear relationship for most of the subtests.

Figure 2 shows the strongest relationship found--that between EGR scores for the Word Analysis subtest and shared decision-making mean scores--and exemplifies the curvilinear form. Inspection of Figure 2 shows that gap reduction scores: (a) tended to be largest where shared decision-making scores were lowest, (b) decreased with increasing shared decision-making, (c) reached a low

at a point, 48.7, somewhat above the mean of the 1993 shared decision-making distribution, and (d) increased as shared decision-making increased past the mean of the 1993 distribution. This (truncated) U-shaped relationship was well described by a quadratic equation in shared decision-making score. A multiple correlation coefficient of .89 was obtained when a quadratic term in shared decision-making score was included in the equation for predicting Word Analysis EGR. Similar results were found with EGRs for other reading and mathematics subtests, but language subtest EGRs appeared unrelated to shared decision-making scores.

Table 1 shows the multiple correlation coefficients obtained when a quadratic equation in shared decision-making score was used to predict the different achievement measures. Note in Table 1 that significant multiple correlations were found between shared decision-making and EGRs for all reading subtests except vocabulary and all mathematics subtests. Only one multiple correlation involving OAGs was significant--that for word analysis.

Table 1

Multiple Correlation Coefficients between Achievement Measures and a Quadratic Function of Shared Decision-Making Scores

Subtest	Achievement Gain	Ethnic Gap Reduction
Word Analysis	.66*	.89**
Vocabulary	.19	.60
Reading Comprehension	.39	.70*
Total Reading	.22	.71*
Language Mechanics	.31	.21
Language Expression	.52	.49
Total Language	.46	.20
Math Computation	.51	.79**
Math Concepts/Applications	.33	.67*
Total Math	.47	.81**

N = 12. *$p < .05$. **$p < .01$.

DISCUSSION

A discussion of the results has more meaning when we describe the context in which the results occurred. The Schools for the 21st Century (C21) Consortium was created in September, 1988. Its goal was to produce change within the 30 schools in a zone of the Seattle School District. Change was to occur in four areas: (a) staff development, (b) networking--among the schools, (c) linking--schools to the community, (d) restructuring the schools.

These changes were to be implemented under the rubric of "School Focused Leadership". In the first major shift away from central control, the C21 schools were granted more latitude in decision-making. Staff development opportunities helped teachers to learn about the many changes taking place through the restructuring movement. Leadership from the schools and district promoted a move toward site-based decision-making.

The first outcome evaluation was conducted in spring 1992. Results of the spring achievement testing favored the C21 schools both in overall score and in reduction of the ethnic gap, long a prized target of the district. Since many programs in the C21 schools were the same as programs in other district schools, it was difficult to account for the difference in results.

New leadership of the C21 program questioned the reason for the difference. Observations of each of the schools revealed an apparent similarity to most of the other district schools. The C21 advisory council decided to determine the extent to which "School Focused Leadership" was really occurring in their schools.

To this end, a group of teachers--members of the advisory council--constructed the questionnaire described in the Methods section of this paper. The questionnaire was administered to all teachers in the C21 schools in spring 1992. The questionnaire, with a few minor revisions, was readministered in spring 1993.

In addition to asking teachers for the extent of shared decision-making as they perceived it to be in their schools, the revised questionnaire also asked them to rate the ideal for each of the 14 school procedures and practices. Figure 3 shows the discrepancy between the ideal and the real, as rated in both 1993 and 1992. It is clear that schools made significant movement toward the ideal from 1992 to 1993, but they are still short of attainment.

The movement depicted in Figure 3 suggests an explanation for the curvilinear relationship of shared decision-making to achievement, as indexed by EGRs. C21 schools moved at different rates in making the shift toward shared decision-making. As they begin shifting toward shared decision-making, they show a drop in EGR. As they reach a point of greater influence in decision-making, the scores

begin to rise. The EGRs for the coming year, 1994, should be greater in schools that have increased their overall influence. Results for 1994--and 1995--will put this prediction to test.

It is not surprising to find a curvilinear relationship occurring with this fundamental change in decision-making about school procedures and practices. The literature predicts, explicitly or implicitly, reductions in output as change is initiated and increases in output as change becomes institutionalized (David, 1989; Drucker, 1991; Glickman, 1992; Prestine & Bowen, 1993; Tye, 1992). If the change is for the better, output should exceed its level prior to implementation of the change.

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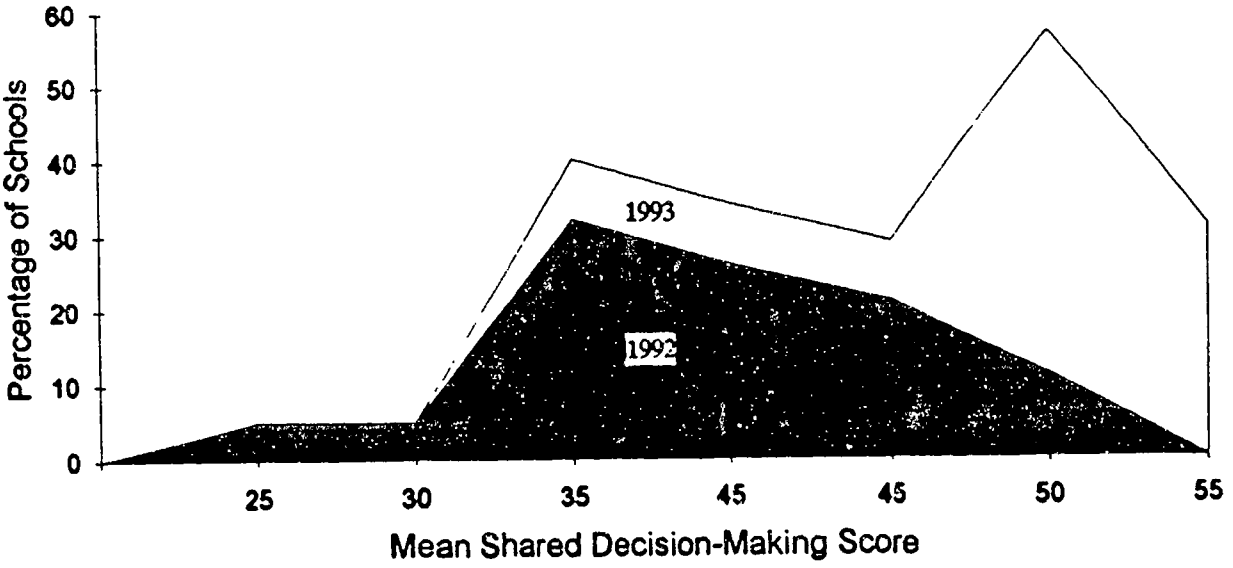

Figure 1. Distributions of Mean Shared Decision-Making Scores for 1992 and 1993

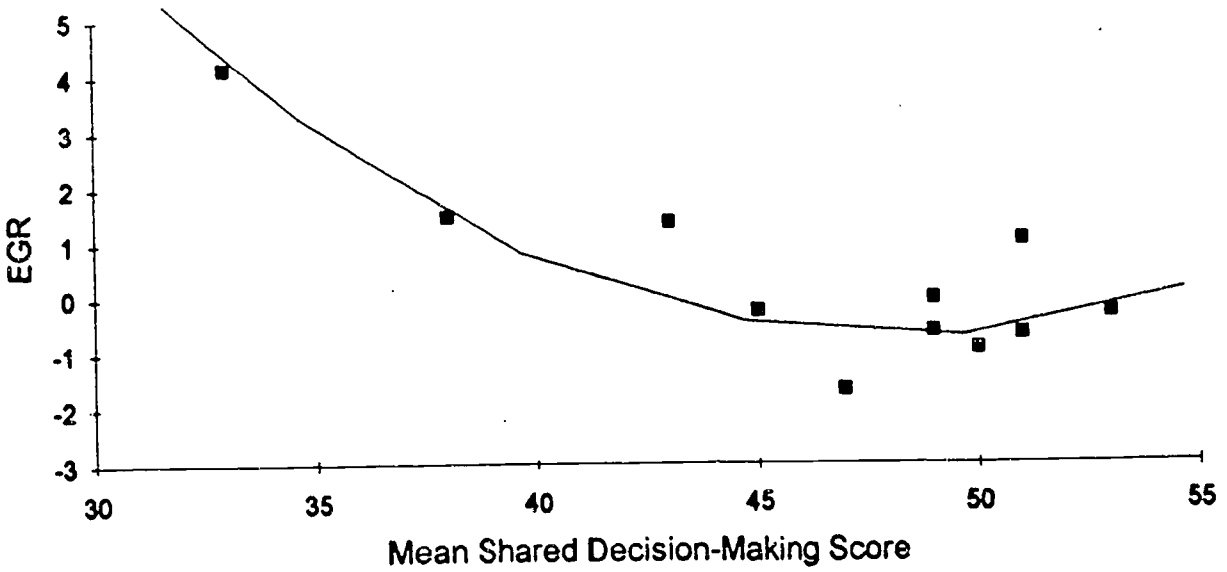

Figure 2. Word Analysis EGR by Mean Shared Decision-Making Score, 1993

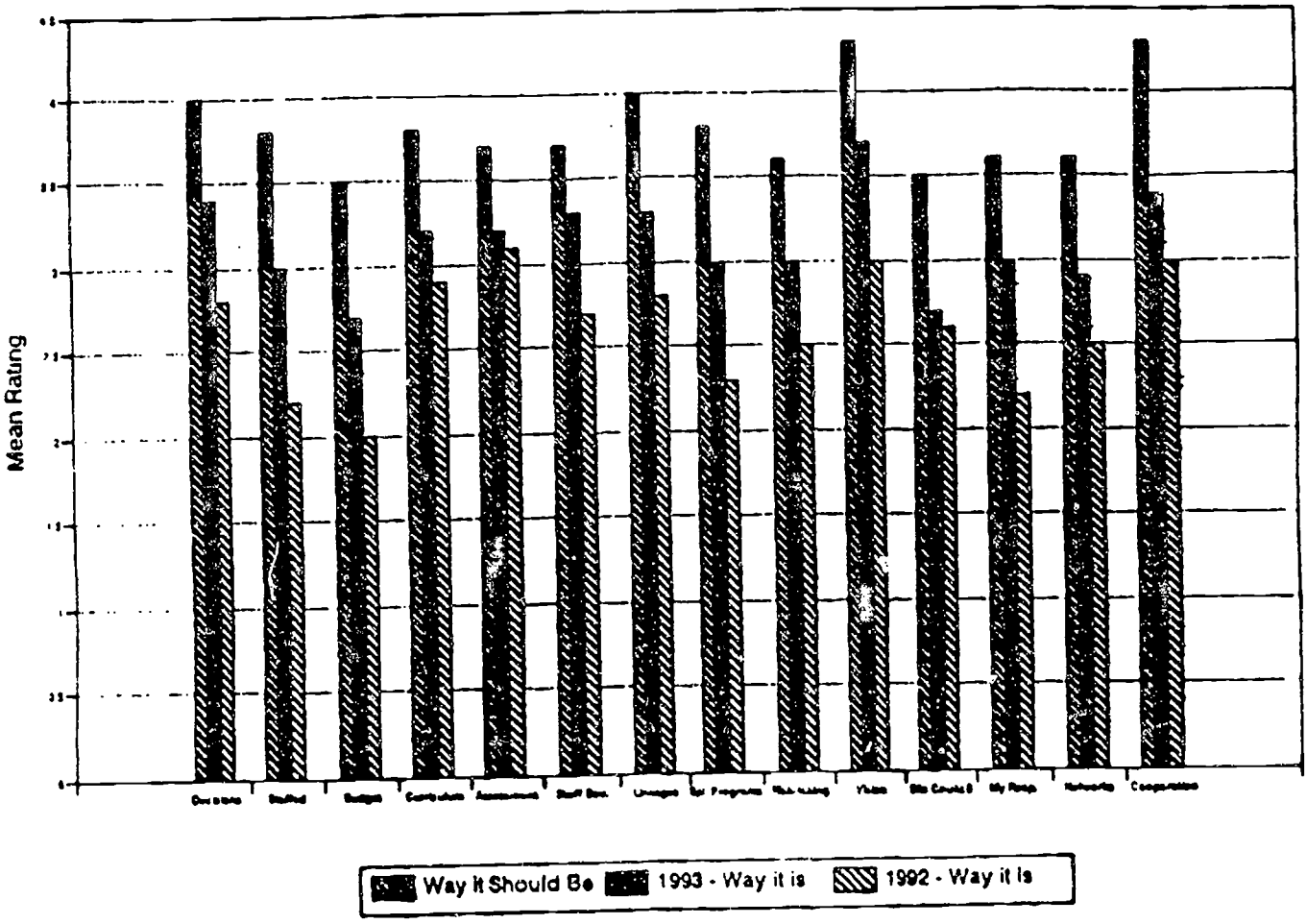

Figure 3. Item Responses for Actual Mode, 1992 and 1993, and for Ideal Mode, 1993