Chapter 4

Presentation and Analysis of the Data

Introduction

The previous chapter presented information on the sample, instrumentation, process for data collection, and a brief description of the method of analysis. This chapter presents a complete description of the findings.

The purposes of this study were two fold: 1) To examine school district variables in terms of their contribution to student achievement, and 2) To specifically examine the contribution of a measure of conflict within the school district to student achievement in that school district.

Of the original 50 districts selected to participate in the study only those with a survey return rate of at least three teacher surveys per district were used in the study. This resulted in a sample school district population of 38 school districts (Appendix F). The results of the statistical analysis of the data is described in the following tables. The frequencies and histograms of the data are displayed in Appendix G.

Organizational Variables

The organizational variables analyzed for each school district included pupil-teacher ratio (PT), administrative intensity (AT), the number of professional support staff (PS), and staff qualifications (SQ) as defined in Chapter 3. The organizational variable data for each school district is listed in Table 4.1.

Table 4.1

Organizational Variables

(PT=Pupil Teacher Ratio: AT=Administrative Intensity: PS=Professional Support Staff: SQ=Staff Qualifications)

School	PT	AT	PS	SQ
Alma	12	2.0	0.87	29
Anselmo-Myrna	12	2.0	0.95	22
Ashland Greenwood	15	3.0	2.82	52
Axtell	14	1.5	1.00	31
Bayard	14	3.0	2.40	27
Bloomfield	10	2.0	1.27	23
Centennial	14	4.0	2.0	36
Central City	05	4.0	2.87	40
Chappell	12	2.0	0.80	12
Coleridge	11	1.0	0.67	24
Conestoga	23	3.0	4.0	29
Dodge	09	1.37	0.75	08
Elkhorn Valley	13	1.0	1.0	18
Exter	13	1.33	0.75	21
Hartington	11	2.50	2.60	64
Humphrey	09	2.50	1.90	14
Lewisville	12	3.00	1.00	27
Lyons-Decatur	13	3.00	1.75	12
Mitchell	14	3.75	3.00	13
Morrill	13	3.00	1.00	23
Newcastle	09	1.00	0.86	30
Niobrara	08	2.00	1.00	29
North Loup Scotia	11	2.29	0.94	41
Plamer	12	1.75	0.62	23
Ponca	14	2.00	1.00	30
Ravenna	13	2.70	1.70	51
Red Cloud	14	2.00	0.80	20
Sargent	12	1.50	0.60	04
Scribner-Sydner	10	2.00	1.68	23
Shickley	08	2.00	0.50	38
Spencer-Naper	11	1.50	0.50	14
St. Paul	14	3.00	2.88	22
Stuart	10	1.13	1.00	19
Sutherland	13	3.00	1.10	23
Wilber-Clatonia	17	3.00	2.50	53
Wilcox	11	1.50	0.50	33

Winnebago	10	3.80	2.00	22
Wisner-Pilger	14	3.00	1.10	41

Environmental Variables

The environmental variables analyzed for each school district included fiscal resources (FR), cost per pupil (CP), disadvantaged students (DS), minorities (MN), and school district size (SZ) as defined in Chapter 3. Environmental variable data for each school district is listed in Table 4.2.

Table 4.2

Environmental Variables

(FR=Fiscal Resources; CP=Cost Per Pupil; DS=Disadvantaged Students; MN=Minorities; SZ=School District Size)

School	FR	CP	DS	MN	SZ
Alma	2.511	7210	27	006	358
Anselmo-Myrna	2.040	6616	29	001	286
Ashland Greenwood	4.425	6169	56	018	770
Axtell	1.902	6284	22	002	323
Bayard	3.338	7458	61	085	500
Bloomfield	2.702	8941	41	014	306
Centennial	3.861	7162	29	015	647
Central City	5.508	6741	24	024	812
Chappell	1.864	7488	35	006	258
Coleridge	1.504	8294	29	000	201
Conestoga	4.612	6664	18	021	678
Dodge	1.249	7146	33	013	171
Elkhorn Valley	2.886	6352	86	035	445
Exter	1.400	8142	25	002	206
Hartington	2.856	7085	30	010	349
Humphrey	1.929	9604	28	005	201
Lewisville	2.859	6789	10	021	476
Lyons-Decatur	2.756	6689	39	045	426
Mitchell	4.358	6009	50	139	641
Morrill	4.099	6924	54	115	489
Newcastle	1.249	7840	39	004	173
Niobrara	1.322	9538	64	060	157

North Loup Scotia	1.633	7064	57	016	230
Plamer	1.645	6568	34	007	257
Ponca	2.221	5422	16	002	430
Ravenna	2.979	6702	34	005	490
Red Cloud	2.244	7412	42	008	286
Sargent	1.860	8149	46	007	233
Scribner-Sydner	2.309	7820	27	010	307
Shickley	1.462	9408	23	001	159
Spencer-Naper	1.751	6954	43	004	270
St. Paul	4.011	6392	36	012	645
Stuart	4.384	7462	56	005	203
Sutherland	2.416	7252	35	021	385
Wilber-Clatonia	3.503	5962	20	019	587
Wilcox	1.679	8023	33	000	211
Winnebago	3.120	9520	85	413	422
Wisner-Pilger	3.438	6057	45	005	513

Note. FR - Fiscal resources in millions of dollars

Organizational Health Survey Factors

The Survey of School District Organizational Health (Appendix B) was designed to measure teacher perceptions of different parts of the school district. The survey contained eight sub-scales or factors. The factors analyzed for each school district included student outcomes (LA), leadership (LD), organizational structure (OS), communication (CO), conflict management (CM), human resource management (HR), participation (PA), and creativity (CR) as defined in Chapter 3. The survey contained 10 questions for each factor. As a result of using a 5-point Likert scale each question received a score from 1 to 5. An average score for each factor was calculated for each survey returned and a district overall score was then calculated by averaging these scores. The scores for each district are listed in Table 4.3.

Table 4.3

Organizational Health Survey Factors

(LA = Student Outcomes: LD=Leadership: OS=Organizational Structure: CO=Communication: CM=Conflict Management: HR=Human Resource Management: PA=Participation: CR=Creativity: TS=Total Score)

School Name	LA	LD	OS	CO	CM	HR	PA	CR	TS
Alma	2.57	1.97	2.17	2.33	2.27	2.07	2.47	2.50	2.29
Anselmo-Myrna	2.97	1.83	2.63	2.63	2.33	2.47	2.67	2.63	2.52
Ashland Greenwood	3.20	3.42	3.42	3.26	2.74	3.16	3.44	3.20	3.23
Axtell	2.83	2.68	2.78	2.63	2.60	2.78	2.43	2.83	2.70
Bayard	3.30	3.33	3.33	2.83	2.67	3.23	3.27	2.97	3.12
Bloomfield	2.87	2.20	2.67	2.17	2.17	2.23	2.77	3.03	2.51
Centennial	3.07	2.93	3.23	3.20	3.00	3.23	3.27	3.30	3.15
Central City	2.43	2.13	2.50	2.70	1.97	2.50	2.87	2.73	2.48
Chappell	3.40	3.43	3.53	3.33	3.10	3.30	3.43	3.23	3.34
Coleridge	3.36	3.42	3.46	3.22	2.92	3.14	3.04	3.06	3.20
Conestoga	2.58	2.50	2.93	2.73	2.50	2.53	2.93	2.43	2.64
Dodge	3.20	3.00	3.20	2.90	2.73	2.93	3.27	2.97	3.03
Elkhorn Valley	2.83	2.70	2.53	2.43	2.63	2.57	2.63	2.73	2.63
Exter	2.83	2.68	2.60	2.38	2.60	2.63	2.70	2.73	2.64
Hartington	2.93	3.10	3.10	2.97	2.73	3.33	3.13	2.80	3.01
Humphrey	2.80	2.65	2.73	2.60	2.68	2.73	3.05	3.08	2.79
Lewisville	2.75	1.95	2.43	2.10	2.25	2.38	2.45	2.63	2.37
Lyons-Decatur	2.43	2.47	2.77	2.40	2.23	2.63	2.50	2.20	2.45
Mitchell	3.30	3.50	3.42	2.70	2.60	2.97	3.10	2.63	3.03
Morrill	3.06	2.88	2.78	2.92	2.74	2.64	3.14	2.96	2.89
Newcastle	2.60	2.37	2.27	2.65	2.00	2.47	2.77	2.30	2.43
Niobrara	3.38	3.18	3.33	2.93	2.58	3.25	3.25	3.20	3.14
North Loup Scotia	3.13	3.07	3.30	2.70	2.80	3.07	2.97	2.93	3.00
Plamer	3.38	3.45	3.45	3.18	2.90	3.30	3.43	3.23	3.29
Ponca	3.15	3.42	3.54	3.33	3.12	3.34	3.41	3.28	3.32
Ravenna	2.67	2.33	2.53	2.05	2.10	2.45	2.43	2.52	2.39
Red Cloud	2.80	2.18	2.78	2.85	2.45	2.73	3.01	2.98	2.72
Sargent	2.77	3.23	3.30	2.87	2.77	2.93	3.20	3.13	3.03
Scribner-Sydner	3.43	3.53	3.27	3.00	3.03	3.13	3.33	3.23	3.25
Shickley	3.23	3.30	3.10	2.77	2.80	2.90	3.07	2.80	3.00
Spencer-Naper	2.74	2.87	2.88	2.70	2.44	2.78	2.83	2.68	2.74
St. Paul	3.08	2.83	3.08	2.90	2.80	3.23	2.98	2.78	2.96
Stuart	2.63	2.33	2.78	2.23	2.20	2.13	2.19	2.63	2.39
Sutherland	3.27	3.23	2.80	2.93	2.70	3.10	2.97	3.03	3.00
Wilber-Clatonia	2.95	2.65	2.73	2.60	2.43	2.58	2.63	2.75	2.67

Wilcox	3.40	3.52	3.43	3.07	2.82	3.35	3.28	3.40	3.28
Winnebago	2.67	1.67	1.83	1.87	1.53	2.07	1.80	1.93	1.92
Wisner-Pilger	3.48	3.48	3.50	3.23	2.93	3.25	3.28	3.08	3.28

School District Achievement Scores

Reading (RA) and math (MA) achievement scores were determined for each district using standardized test results as reported on the Nebraska State Report Card. For each achievement area in grades four, eight, and eleven the number of students who received scores in each quartile was divided by the total number of students in that grade. This number was then multiplied by a corresponding weighted factor for each quartile. The top quartile weighted factor was four and the number decreased by 1 for each of the next three quartiles. An average was then calculated from the resulting numbers and this number represented that particular grade levels score for that achievement area. These scores were then averaged to determine a total score for each achievement area for each district. For example, in a particular grade level if 3 students scored in the top quartile, 5 scored in the next, 5 in the next, and 3 in the last quartile, the average for the top quartile would be 3/23 = 0.1875, the average for the next quartile would be 5/23 = 0.3125, the average for the next quartile would be 5/23 = 0.3125, and the average for the last quartile would be 3/23 = 0.1875. The total score for this area in this grade level would then be (0.1875X4) + (0.3125X3) + (0.3125X2) + (0.1875X1) = 2.4928. The total scores from all three grade levels examined were then averaged for a final score for the district in that particular achievement area. The final achievement scores for each district are listed in Table 4.4.

Table 4.4

Reading (RA) and Math (MA) Achievement Scores

School Name	RA	MA
Alma	3.04	2.96
Anselmo-Myrna	2.84	3.10
Ashland Greenwood	2.88	2.98
Axtell	2.83	3.26
Bayard	2.65	2.30
Bloomfield	2.92	3.26
Centennial	2.70	2.92
Central City	2.92	2.95
Chappell	2.82	2.91
Coleridge	2.98	2.98
Conestoga	2.76	2.95
Dodge	2.53	2.77
Elkhorn Valley	2.42	2.73
Exter	2.80	3.00
Hartington	3.06	3.11
Humphrey	2.75	3.07
Lewisville	2.87	3.00
Lyons-Decatur	2.75	3.03
Mitchell	2.68	2.75
Morrill	2.76	2.85
Newcastle	3.04	2.14
Niobrara	2.76	3.17
North Loup Scotia	2.03	2.64
Plamer	2.92	3.05
Ponca	1.86	1.73
Ravenna	3.03	3.17
Red Cloud	2.62	3.06
Sargent	2.58	2.82
Scribner-Sydner	2.82	3.03
Shickley	1.96	1.98
Spencer-Naper	2.80	2.97
St. Paul	2.66	3.00
Stuart	3.23	3.38
Sutherland	2.99	2.72
Wilber-Clatonia	2.40	2.88
Wilcox	2.99	3.19
Winnebago	1.06	0.84
Wisner-Pilger	2.89	3.13

Correlations

Table 4.5 presents the correlation matrix of organizational variables, environmental variables, math achievement, and reading achievement. Significant correlations are noted in the table.

Table 4.5

Correlation Matrix of Organizational Variables, Environmental Variables, Math Achievement and Reading Achievement

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1 (RA)	1.00									
X2 (MA)	.831	1.00								
X3 (SQ)	.056	.040	1.00							
X4 (PT)	.012	.099	.115	1.00						
X5 (PS)	-.021	-.019	.338*	.429**	1.00					
X6 (AT)	-.197	-.183	.298	.220	.696**	1.00				
X7 (SZ)	-.014	-.013	.359*	.469**	.786**	.777**	1.00			
X8 (MN)	-.634**	-.663**	-.132	-.049	.241	.449**	.188	1.00		
X9 (DS)	-.315	-.282	-.187	-.129	-.034	-.019	-.024	.577**	1.00	
X10 (FR)	-.008	-.004	.319	.393*	.808**	.808**	.963**	.266	.030	1.00

Note: ** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The correlations listed in Table 4.5 indicate that none of the organizational or environmental factors except for minorities appear to be significantly related to gains or loses in achievement. The table also indicates that there are significant correlations between professional support and staff qualifications, professional support and pupil teacher ratios, administrative intensity and professional support, size and staff qualifications, size and pupil teacher ratio, size and professional support, size and administrative intensity, minorities and administrative intensity, disadvantaged students and minorities, fiscal resources and pupil teacher ratio, fiscal resources and professional support, fiscal resources and administrative intensity, and fiscal resources and size.

Table 4.6 presents the correlation matrix of the School District Organizational Health Survey, math achievement, and reading achievement. Significant correlations are noted in the table.

Table 4.6

Correlation Matrix of the School District Organizational Health Survey, Math Achievement, and Reading Achievement

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1 (RA)	1.00									
X2 (MA)	.831	1.00								
X3 (LA)	-.023	.019	1.00							
X4 (LD)	.063	.061	.816**	1.00						
X5 (OS)	.108	.213	.782**	.897**	1.00					
X6 (CO)	.141	.113	.704**	.795**	.831**	1.00				
X7 (CM)	.157	.265	.671**	.774**	.771**	.684**	1.00			
X8 (HR)	-.250	-.218	.758**	.775**	.737**	.744**	.580**	1.00		
X9 (PA)	.046	.121	.688**	.774**	.829**	.812**	.694**	.655**	1.00	
X10 (CR)	.211	.329*	.721**	.704**	.764**	.757**	.728**	.571**	.765**	1.00

Note: ** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The correlations listed in Table 4.6 indicated that for the most part none of the factors measured by the organizational health survey appear to be related to gains or loses in achievement. The reader will note that there is a significant correlation between math achievement and creativity, but given the high correlations of all the items on the survey, one must take into consideration the probability that the instrument is measuring the same thing. It is a problem that everything on the instrument is correlated with everything on the instrument. Before looking at regression models, it would be safe to say that there appeared to be no particular relationship between leadership and student achievement. Nor did levels of conflict appear significantly related although the math score was more correlated (not significantly) than the reading score.

Regression Models

In order to more closely replicate Bidwell and Kasarda's 1975 study, ten regression models were computed in order to explain variation in school district math and reading achievement. The ten regression models are summarized in the tables that follow.

The first model, presented in Table 4.7, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources. The model achieved significance (f=5.816, p .001) and explained 47.6% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, t = -4.375, p .000). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by -4.375 for each unit gain in reading achievement.

Table 4.7

Model 1 – Environmental Variables and their Correlation with RA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.690[a]	.476	.394	31225

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.835	5	.567	5.816	.001[a]
	Residual	3.120	32	.097		
	Total	5.955	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.621	650		4.033	000
	FR Fiscal Resources in Millions of thousands dollars	3.554E-04	000	970	1.747	090
	CP Cost Per Pupil in thousands of dollars	-1.39E-05	000	-.037	- 187	853
	DS Disadvantage Students (percent)	2.187E-03	004	093	583	564
	MN Number of Minorities	-4.44E-03	001	- 732	-4.375	000
	SIZE School Size	-1.81E-03	001	- 819	-1.347	187

a. Dependent Variable: RA Reading Achievement

The second model, presented in Table 4.8, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources. The model achieved significance (f=7.590, p .001) and explained 54.3% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, t = -1.678, p .000). Holding the other

independent variables constant. the number of minorities in a school district had the effect of depressing the slope of the regression line by –5.77 for each unit gain in math achievement.

Table 4.8

Model 2 – Environmental Variables and their Correlation with M.A

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737[a]	.543	.471	.34744

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.581	5	.916	7.590	.000[a]
	Residual	3.863	32	.121		
	Total	8.444	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.791	.723		3.860	.001
	FR Fiscal Resources in Millions of thousands dollars	4.811E-04	.000	1.102	2.126	041
	CP Cost Per Pupil in thousands of dollars	-3.44E-05	000	-.076	-.417	680
	DS Disadvantage Students (percent)	4.718E-03	004	.169	1.130	.267
	MN Number of Minorities	-5.77E-03	.001	-.855	-5.119	.000
	SIZE School Size	-2.51E-03	001	-.954	-1.578	103

a. Dependent Variable: MA Mathematics Achievement

The third model, presented in Table 4.9, attempted to capture variation in the dependent variable Reading Achievement as explained by the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, and professional support, but failed to achieve significance (f = .653, p .629).

Table 4.9

Model 3 – Organizational Variables and their Correlation with RA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271[a]	073	-.039	40894

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.437	4	.109	.653	.629[a]
	Residual	5.519	33	.167		
	Total	5.955	37			

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.910	.357		8.157	000
	PT Pupil to teacher ratio	-7.90E-04	.025	-.006	-.031	975
	AT Administrative Intensity (Raw FTE)	-.177	.114	-.367	-1.552	.130
	PS Professional Sport (FTE)	9.283E-02	.118	.204	.787	.437
	SQ Staff Qualification (% of teachers with a Master's degree)	2.971E-03	.005	.097	.542	.591

a. Dependent Variable: RA Reading Achievement

The fourth model, presented in Table 4.10, attempted to capture variation in the dependent variable Math Achievement as explained by the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, and professional support, but failed to achieve significance ($F = .617$, p .653).

Table 4.10

Model 4 – Organizational Variables and their Correlation with MA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.264[a]	070	-.043	.48792

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	588	4	.147	.617	653[a]
	Residual	7.856	33	.238		
	Total	8.444	37			

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.386	426		6.781	000
	PT Pupil to teacher ratio	1.665E-02	.030	103	.548	587
	AT Administrative Intensity (Raw FTE)	-.186	.136	-.323	-1.363	.182
	PS Professional Sport (FTE)	7.319E-02	141	.135	.520	606
	SQ Staff Qualification (% of teachers with a Master's degree)	2.866E-03	.007	.079	.439	664

a. Dependent Variable: MA Mathematics Achievement

The fifth model, presented in Table 4.11, attempted to capture variation in the dependent variable Reading Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure. Initially, the model achieved significance (f = 2.275, p .05) and explained 38.6% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Human Resource Management, t = -3.318, p .002). Holding the other independent variables constant, Human Resource Management appeared to have the effect of depressing the slope of the regression line by −3.318 for each unit gain in reading achievement. However, upon closer examination it was noticed that when the p-value for the model was taken out several more decimal places it equaled 0.05028. In order to have an overall significant model the p-value would have needed to be less than or equal to 0.05. Since the actual p-value was slightly larger than 0.05 the model failed to achieve significance (f = .05028, p .2.275).

Table 4.11

Model 5 –Survey Variables and their Correlation with RA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.621[a]	.386	.216	.3552

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.296	8	.287	2.275	.050[a]
	Residual	3.659	29	.126		
	Total	5.955	37			

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

b. Dependent Variable: Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.960	.734		4.032	000
	Learning Outcomes	-9.08E-02	379	-.069	-.239	.813
	Leadership	179	290	.242	616	543
	Organizational Structure	178	376	.189	.474	639
	Communication	592	341	547	1.735	093
	Conflict Management	8.028E-02	293	070	.274	786
	Human Resource Management	- 958	289	- 883	-3.318	002
	Participation	- 353	283	- 368	-1.249	222
	Creativity	324	342	266	950	350

a. Dependent Variable: Reading Achievement

The sixth model, presented in Table 4.12, captured variation in the dependent variable Math Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure. The model achieved significance (f=3.311, p .008) and explained 47.7% of the variation in Math Achievement. Additionally, two independent variables contributed significantly to the model (Organizational Structure, t = 2.066, p .048, and Human Resource Management, t = -2.828, p .008). This indicated a suppression effect. "Suppression occurs when either the absolute value of a predictor's beta weight is

greater than its Pearson correlation with the criterion or when the two have different signs. This situation refers to the latter. Specifically, suppression refers to finding that the relation of an independent variable to a dependent variable (math achievement) when corrected for its intercorrelation with other predictors is quite different from that suggested by its simple correlation with the criterion. With this model consider the correlation and beta weights (standardized beta weights in output). Recall the association between organizational structure and math achievement was r = .213 (non significant when tested at alpha = .05) and the association between human resource management and math achievement was r = -.218. When the associations between all of the variables are controlled for (removing or partialing out the effect/association of other variables in the model) in multiple regression analysis, however, both variables have nonzero beta weights (Beta for human resource management = -.694, Beta for organizational structure = .761). These beta weights suggested that adjustment is even a better predictor explanation of math achievement when we are controlling for all other variables in the model to look at the weight human resource management has on math achievement. This demonstrated that correlations of zero or near zero (non-significant) can mask hide predictive relations or explanations once other variables in the model are controlled" (Tolland, 2002). Essentially, the other variables in the model suppressed the true predictive power or explanation that organizational structure and human resource management independently had on math achievement.

Table 4.12

Model 6 –Survey Variables and their Correlation with MA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691[a]	.477	.333	.3901

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.031	8	.504	3.311	.008[a]
	Residual	4.413	29	.152		
	Total	8.444	37			

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

b. Dependent Variable: Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.273	.806		2.819	.009
	Learning Outcomes	-.205	.416	-.132	-.492	.627
	Leadership	-.267	.318	-.304	-.839	.408
	Organizational Structure	.853	.413	.761	2.066	.048
	Communication	7.361E-02	.375	.061	.210	.835
	Conflict Management	.306	.322	.223	.949	.350
	Human Resource Management	-.896	.317	-.694	-2.828	.008
	Participation	-.335	.310	-.293	-1.078	.290
	Creativity	.684	.375	.470	1.824	.078

a. Dependent Variable: Mathematics Achievement

The seventh model, presented in Table 4.13, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of leadership. The model achieved significance (f=2.632, p .022) and explained 49.4% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, t = -3.575, p .001). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by −3.575 for each unit gain in reading achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.13

Model 7 – Environmental, Organizational and Leadership Variables and their Correlation with RA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.703[a]	.494	.306	3342

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	2.940	10	.294	2.632	.022[a]
	Residual	3.016	27	.112		
	Total	5.955	37			

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

b. Dependent Variable: Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.118	.937		3.329	.003
	Fiscal Resources in Millions of thousands dollars	3.090E-04	.000	.843	1.368	.183
	Cost Per Pupil in thousands of dollars	-3.72E-05	.000	-.098	-.408	.687
	Disadvantage Students (percent)	3.000E-03	.005	.128	.648	.522
	Number of Minorities	-4.83E-03	.001	-.851	-3.575	.001
	School Size	-1.81E-03	.002	-.815	-1.169	.253
	Pupil to teacher ratio	-9.05E-03	.024	-.066	-.370	.714
	Administrative Intensity (Raw FTE)	3.145E-02	.151	.065	.208	.837
	Professional Sport (FTE)	5.660E-02	.118	.124	.481	.635
	Staff Qualification (% of teachers with a Master's degree)	-2.48E-03	.005	-.081	-.521	.606
	Leadership	-7.30E-02	.110	-.099	-.665	.511

a. Dependent Variable: Reading Achievement

The eighth model, presented in Table 4.14, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of leadership. The model

achieved significance (f=3.819, p .003) and explained 58.6% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, t = -4.865, p .000). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by -4.865 for each unit gain in math achievement. The simple correlation that we saw earlier between math achievement and minorities closely resembled the relationship between these two variables.

Table 4.14

Model 8 – Environmental, Organizational and Leadership Variables and their Correlation with MA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.765[a]	.586	.432	.3599

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.947	10	.495	3.819	.003[a]
	Residual	3.498	27	.130		
	Total	8.444	37			

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

b. Dependent Variable: Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.081	1.009		3.055	.005
	Fiscal Resources in Millions of thousands dollars	4.081E-04	.000	.935	1.677	.105
	Cost Per Pupil in thousands of dollars	-6.13E-05	.000	-.136	-.623	.538
	Disadvantage Students (percent)	8.095E-03	.005	.289	1.623	.116
	Number of Minorities	-7.07E-03	.001	-1.047	-4.865	.000
	School Size	-3.00E-03	.002	-1.137	-1.802	.083
	Pupil to teacher ratio	1.334E-02	.026	.082	.507	.616
	Administrative Intensity (Raw FTE)	.182	.163	.317	1.118	.274
	Professional Sport (FTE)	5.987E-02	.127	.110	.472	.641
	Staff Qualification (% of teachers with a Master's degree)	-3.67E-03	.005	-.101	-.716	.480
	Leadership	-.136	.118	-.155	-1.153	.259

a. Dependent Variable: Mathematics Achievement

The ninth model, presented in Table 4.15, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of conflict management. The model achieved significance ($F=2.811$, p .016) and explained 51% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, $t = -3.731$, p .001). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by −3.731 for each unit gain in reading

achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.15

Model 9 – Environmental, Organizational and Conflict Management Variables and their Correlation with RA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.714[a]	.510	.329	.32873

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.037	10	.304	2.811	.016[a]
	Residual	2.918	27	.108		
	Total	5.955	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.420	.973		3.516	.002
	FR Fiscal Resources in Millions of thousands dollars	3.056E-04	.000	.834	1.378	.180
	CP Cost Per Pupil in thousands of dollars	-3.96E-05	.000	-.105	-.442	.662
	DS Disadvantage Students (percent)	3.306E-03	.005	.141	.734	.469
	MN Number of Minorities	-5.33E-03	.001	-.939	-3.731	.001
	PT Pupil to teacher ratio	-1.97E-03	.025	-.014	-.079	.938
	AT Administrative Intensity (Raw FTE)	6.540E-02	.153	.135	.428	.672
	PS Professional Sport (FTE)	3.735E-02	.116	.082	.321	.751
	SQ Staff Qualification (% of teacners with a Master's degree)	-2.15E-03	.005	-.070	-.459	.650
	CM Conflict Management	-.230	.197	-.200	-1.167	.253
	SIZE School Size	-1.87E-03	.002	-.847	-1.233	.228

a. Dependent Variable: RA Reading Achievement

The tenth model, presented in Table 4.16, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of conflict management. The model achieved significance (f=3.666, p .033) and explained 57.6% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities, t = -4.523, p .000). Holding the other independent variables constant, the number of minorities in a school district had the effect of

depressing the slope of the regression line by −4.523 for each unit gain in math achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.16

Model 10 – Environmental, Organizational and Conflict Management Variables and their Correlation with MA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759[a]	576	419	.36420

a. Predictors: (Constant), CM Conflict Management, SIZE School Size, DS Disadvantage Students (percent), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.363	10	.486	3.666	.003[a]
	Residual	3.581	27	133		
	Total	8.444	37			

a. Predictors: (Constant), CM Conflict Management, SIZE School Size, DS Disadvantage Students (percent), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.098	1.078		2.874	.008
	FR Fiscal Resources in Millions of thousands dollars	4.195E-04	.000	.961	1.707	.099
	CP Cost Per Pupil in thousands of dollars	-5.69E-05	.000	-.127	-.573	.571
	DS Disadvantage Students (percent)	7.496E-03	.005	.268	1.502	.145
	MN Number of Minorities	-7.15E-03	.002	-1.059	-4.523	.000
	SIZE School Size	-2.99E-03	.002	-1.134	-1.774	.087
	PT Pupil to teacher ratio	1.714E-02	.028	.106	.618	.542
	AT Administrative Intensity (Raw FTE)	.182	.169	.317	1.076	.291
	PS Professional Sport (FTE)	4.014E-02	.129	.074	.311	.758
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.46E-03	.005	-.095	-.664	.512
	CM Conflict Management	-.178	.218	-.130	-.817	.421

a. Dependent Variable: MA Mathematics Achievement

The next model, presented in Table 4.17, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Reading Achievement. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.972) found beneath the column for Sig. F Change in row 2 to alpha = .05). The results also indicated that Model 3 did not account for

significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.321) found beneath the column for Sig. F Change in row 3 to alpha = .05). Each of the models achieved significance (model one f = 5.816, p .001; model 2 f = 2.934, p .014; model 3 f = 2.745, p .018). Model 1 explained 47.6% of the variance. Model 2 explained 48.5% of the variance, and Model 3 explained 50.4% of the variance in Reading Achievement. Additionally, one independent variable contributed significantly to each of the models (Number of Minorities, t = -4.523, p .001). In Model 1, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by –4.375 for each unit gain in reading achievement. In Model 2, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by –3.581 for each unit gain in reading achievement. In Model 3, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by –3.673 for each unit gain in reading achievement. Interestingly enough, adding the organizational and total score variables did not significantly change the amount of variation (59.55%) explained in reading achievement in either Model 2 or Model 3.

Table 4.17

Regression Results A for Reading Achievement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.690[a]	.476	.394	.3122	.476	5.816	5	32	.001
2	.697[b]	.485	.320	.3309	.009	.126	4	28	.972
3	.710[c]	.504	.320	.3307	.019	1.022	1	27	.321

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.835	5	.567	5.816	.001[a]
	Residual	3.120	32	9.750E-02		
	Total	5.955	37			
2	Regression	2.890	9	.321	2.934	.014[c]
	Residual	3.065	28	.109		
	Total	5.955	37			
3	Regression	3.002	10	.300	2.745	.018[c]
	Residual	2.953	27	.109		
	Total	5.955	37			

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

d. Dependent Variable: Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.621	650		4.033	000
	Fiscal Resources in Millions of thousands dollars	3.554E-04	000	970	1.747	090
	Cost Per Pupil in thousands of dollars	-1.39E-05	000	-.037	-.187	853
	Disadvantage Students (percent)	2.187E-03	004	093	583	564
	Number of Minorities	-4.44E-03	001	-.782	-4.375	000
	School Size	-1.81E-03	001	-.819	-1.347	187
2	(Constant)	2.919	879		3.322	002
	Fiscal Resources in Millions of thousands dollars	3.218E-04	000	878	1.444	160
	Cost Per Pupil in thousands of dollars	-3.15E-05	000	-.083	-.351	729
	Disadvantage Students (percent)	2.234E-03	004	095	503	619
	Number of Minorities	-4.55E-03	001	-.801	-3.581	001
	School Size	-1.75E-03	002	-.790	-1.146	261
	Pupil to teacher ratio	-1.06E-02	024	-.078	-.440	664
	Administrative Intensity (Raw FTE)	7.429E-03	146	015	051	960
	Professional Soort (FTE)	5.220E-02	116	114	449	657
	Staff Qualification (% of teachers with a Master's degree)	-2.52E-03	005	-.082	-.534	597
3	(Constant)	3.387	993		3.412	002
	Fiscal Resources in Millions of thousands dollars	3.108E-04	000	848	1.394	175
	Cost Per Pupil in thousands of dollars	-3.98E-05	000	-.105	-.441	663
	Disadvantage Students (percent)	3.421E-03	005	146	745	463
	Number of Minorities	-5.15E-03	001	-.907	-3.673	001
	School Size	-1.39E-03	002	-.852	-1.232	229
	Pupil to teacher ratio	-7.68E-03	024	-.056	-.316	754
	Administrative Intensity (Raw FTE)	5.778E-02	154	120	376	710
	Professional Soort (FTE)	5.172E-02	116	113	445	660
	Staff Qualification (% of teachers with a Master's degree)	-2.59E-03	005	-.085	-.550	587
	Total Score	-.178	176	-.157	-1.011	321

a. Dependent Variable: Reading Achievement

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Pupil to teacher ratio	-.047[a]	-.296	.769	-.053	.662
	Administrative Intensity (Raw FTE)	.007[a]	.026	.980	.005	.209
	Professional Sport (FTE)	.065[a]	.282	.780	.051	.317
	Staff Qualification (% of teachers with a Master's degree)	-.066[a]	-.460	.649	-.082	.815
	Total Score	-.143[a]	-1.032	.310	-.182	.857
2	Total Score	-.157[b]	-1.011	.321	-.191	.762

a. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Dependent Variable: Reading Achievement

Notes for these results:
Model 1 = Reduced Model 1 = Reading achievement regressed on the environmental variables
Model 2 = Reduced Model 2 = Reading achievement regressed on the environmental & organizational variables
Model 3 = Full Model = Reading achievement regressed on the environmental, organizational, & total score variables

The next model, presented in Table 4.18, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Math Achievement. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.829) found beneath the column for Sig. F Change in row 2 to alpha = .05). The results also indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value

(.257) found beneath the column for Sig. F Change in row 3 to alpha = .05). Each of the models achieved significance (model one f = 7.590. p .000: model 2 f = 4.048. p .002: model 3 f = 3.821. p .003). Model 1 explained 54.3% of the variance. Model 2 explained 56.5% of the variance. and Model 3 explained 58.6% of the variance in Math Achievement. Additionally. two independent variables contributed significantly (Model 1: Fiscal Resources. t = 2.126. p .041: Number of Minorities. t = -5.119. p .000: Model 2: Number of Minorities. t = -4.714. p .000: Model 3 Number of Minorities. t = -4.786. p .000). In Model 1. holding the other independent variables constant. the Fiscal Resources of the district had the effect of increasing the slope of the regression line by 2.126 for each unit gain in math achievement. Also. the number of minorities in a school district had the effect of depressing the slope of the regression line by -4.375 for each unit gain in math achievement. In Model 2. holding the other independent variables constant. the number of minorities in a school district had the effect of depressing the slope of the regression line by -4.714 for each unit gain in reading achievement. In Model 3. holding the other independent variables constant. the number of minorities in a school district had the effect of depressing the slope of the regression line by -4.786 for each unit gain in math achievement. The reason that fiscal resources may not have contributed to the Models 2 and Model 3 was that there may have been a spurious effect going on. That is. because the regression weight of fiscal resources on math achievement in Model 1 disappeared when we added the organizational variables and then controlled for these and the other four environmental variables. the fiscal resources weight may be a spurious one. Interestingly enough. adding the organizational and total score variables did not

significantly change the amount of variation (84.4%) explained in math achievement in either Model 2 or Model 3.

Table 4.18

Regression Results B for Math Achievement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.737[a]	.543	.471	.3474	.543	7.590	5	32	.000
2	.752[b]	.565	.426	.3620	.023	.368	4	28	.829
3	.765[c]	.586	.433	.3599	.021	.339	1	27	.257

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.581	5	.916	7.590	.000[a]
	Residual	3.863	32	.121		
	Total	8.444	37			
2	Regression	4.774	9	.530	4.048	.002[b]
	Residual	3.670	28	.131		
	Total	8.444	37			
3	Regression	4.948	10	.495	3.821	.003[c]
	Residual	3.496	27	.129		
	Total	8.444	37			

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

d. Dependent Variable: Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.791	723		3.860	001
	Fiscal Resources in Millions of thousands dollars	4.811E-04	000	1 102	2.126	041
	Cost Per Pupil in thousands of dollars	-3 44E-05	000	- 076	- 417	680
	Disadvantage Students (percent)	4 718E-03	004	169	1.130	267
	Number of Minorities	-5.77E-03	001	- 855	-5.119	000
	School Size	-2 51E-03	001	- 954	-1 678	103
2	(Constant)	2.709	961		2.818	009
	Fiscal Resources in Millions of thousands dollars	4 320E-04	000	990	1 772	087
	Cost Per Pupil in thousands of dollars	-5 07E-05	000	- 113	- 515	611
	Disadvantage Students (percent)	6.665E-03	005	238	1.372	181
	Number of Minorities	-6 55E-03	001	- 969	-4 714	000
	School Size	-2.89E-03	002	-1.097	-1 731	094
	Pupil to teacher ratio	1 046E-02	026	065	397	695
	Administrative Intensity (Raw FTE)	137	159	239	863	396
	Professional Sport (FTE)	5 166E-02	127	095	406	688
	Staff Qualification (% of teachers with a Master's degree)	-3.74E-03	005	- 103	- 725	475
3	(Constant)	3.292	1 080		3.048	005
	Fiscal Resources in Millions of thousands dollars	4.183E-04	000	958	1.724	096
	Cost Per Pupil in thousands of dollars	-6.10E-05	000	- 136	- 621	540
	Disadvantage Students (percent)	8.144E-03	005	291	1.630	115
	Number of Minorities	-7 30E-03	002	-1.080	-4 786	000
	School Size	-3 06E-03	002	-1 162	-1 838	077
	Pupil to teacher ratio	1 409E-02	026	087	534	598
	Administrative Intensity (Raw FTE)	200	167	348	1.196	242
	Professional Sport (FTE)	5.106E-02	127	094	403	690
	Staff Qualification (% of teachers with a Master's degree)	-3.83E-03	005	- 105	- 747	461
	Total Score	- 221	191	- 164	-1.157	257

a. Dependent Variable: Mathematics Achievement

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Pupil to teacher ratio	.077[a]	.516	.609	.092	.662
	Administrative Intensity (Raw FTE)	.193[a]	.732	.470	.130	.209
	Professional Sport (FTE)	.097[a]	.451	.655	.081	.317
	Staff Qualification (% of teachers with a Master's degree)	-.084[a]	-.629	.534	-.112	.815
	Total Score	-.106[a]	-.813	.422	-.145	.857
2	Total Score	-.164[b]	-1.157	.257	-.217	.762

a. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Dependent Variable: Mathematics Achievement

Notes for these results:
Model 1 = Reduced Model 1 = Math achievement regressed on the environmental variables
Model 2 = Reduced Model 2 = Math achievement regressed on the environmental & organizational variables
Model 3 = Full Model = Math achievement regressed on the environmental, organizational, & total score variables

Removal of Significant Variables

As a result of finding that the number of minorities variable was the main contributing factor in the majority of models the researcher performed further analysis. It was noted that one school in the sample population appeared to be an outlier due to its high number of minorities when compared to the rest of the schools in the study. The number of minorities data from this district was removed and additional regression models were computed on all models that had originally been found to be significant. The models are summarized in the tables that follow.

The first model, presented in Table 4.19, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources with the outlier district data removed, but failed to achieve significance ($f = .336$, $p .852$).

Table 4.19

Variation in Reading Achievement as Explained by the Environmental Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	201[a]	040	- 080	30945

a. Predictors: (Constant), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, DS Disadvantage Students (percent), FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.129	4	.032	336	852[a]
	Residual	3.064	32	096		
	Total	3.193	36			

a. Predictors: (Constant), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, DS Disadvantage Students (percent), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.194	.549		3.998	.000
	FR Fiscal Resources in Millions of thousands dollars	6.137E-05	000	.228	.992	.329
	CP Cost Per Pupil in thousands of dollars	5.289E-05	.000	.179	.888	.381
	DS Disadvantage Students (percent)	1.095E-03	.004	.057	.285	.778
	MN Number of Minorities	-1 58E-03	.002	-.166	-.740	.465

a. Dependent Variable: RA Reading Achievement

The second model, presented in Table 4.20, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources with the outlier district data removed, but failed to achieve significance (f = .876, p .509).

Table 4.20

The Variation in Math Achievement as Explained by the Environmental Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	352[a]	124	-.018	35070

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.538	5	.108	.876	.509[a]
	Residual	3.813	31	.123		
	Total	4 351	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std Error	Beta		
1	(Constant)	2.714	740		3 668	001
	FR Fiscal Resources in Millions of thousands dollars	4 120E-04	000	1 311	1 631	113
	CP Cost Per Pupil in thousands of dollars	-1 86E-05	000	- 054	- 214	832
	DS Disadvantage Students (percent)	4 019E-03	004	178	923	363
	MN Number of Minorities	-4 33E-03	003	- 388	-1 708	098
	SIZE School Size	-2 15E-03	002	-1 133	-1 326	194

a. Dependent Variable: MA Mathematics Achievement

The third model, presented in Table 4.21, attempted to capture variation in the dependent variable Math Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure with the outlier district data removed, but failed to achieve significance ($f = 1.57$, $p .179$).

Table 4.21

The Variation in Math Achievement as Explained by the Survey of School District Organizational Health Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556[a]	.310	.112	32754

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.347	8	.168	1.570	.179[a]
	Residual	3.004	28	.107		
	Total	4.351	36			

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.615	.693		4.061	.000
	LA Learning Outcomes	3.628E-02	.356	.032	.102	.920
	LD Leadership	-.438	.272	-.651	-1.615	.118
	OS Organizational Structure	.564	.356	.631	1.585	.124
	CO Communication	-.304	.332	-.302	-.916	.367
	CM Conflict Management	-8.31E-02	.291	-.072	-.286	.777
	HR Human Resource Management	.207	.404	.222	.512	.613
	PA Participation	-.544	.267	-.588	-2.037	.051
	CR Creativity	.568	.317	.480	1.793	.084

a. Dependent Variable: MA Mathematics Achievement

The fourth model, presented in Table 4.22, attempted to capture variation in the dependent variable Reading Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure with the outlier district data removed, but failed to achieve significance ($f = 1.278$, $p .294$).

Table 4.22

The Variation in Reading Achievement as Explained by the Survey of Organizational Health Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517[a]	267	058	28903

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.854	8	.107	1.278	.294[a]
	Residual	2.339	28	084		
	Total	3.193	36			

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.484	.612		5.696	.000
	LA Learning Outcomes	.143	.314	.147	.454	.653
	LD Leadership	1.308E-02	.240	.023	.055	957
	OS Organizational Structure	-.101	.314	-.132	-.323	.749
	CO Communication	.222	.293	.257	.756	.456
	CM Conflict Management	-.296	.257	-.301	-1.153	259
	HR Human Resource Management	.110	.357	.138	.308	.760
	PA Participation	-.555	.236	-.701	-2.357	.026
	CR Creativity	.212	279	.209	.758	.455

a. Dependent Variable: RA Reading Achievement

The fifth model, presented in Table 4.23, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of leadership with the outlier district data removed, but failed to achieve significance (f = .335, p .963).

Table 4.23

The Variation in Reading Achievement as Explained by the Environmental, Organizational, and Leadership, Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338[a]	.114	-.227	.32985

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.364	10	.036	.335	.963[a]
	Residual	2.829	26	.109		
	Total	3.193	36			

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.060	926		3.306	003
	FR Fiscal Resources in Millions of thousands dollars	1.693E-04	000	629	685	499
	CP Cost Per Pupil in thousands of dollars	3.123E-06	000	011	033	974
	DS Disadvantage Students (percent)	1.239E-03	005	064	260	797
	MN Number of Minorities	-1.47E-03	003	- 154	- 509	615
	SIZE School Size	-9.29E-04	002	- 572	- 558	582
	PT Pupil to teacher ratio	-8.77E-03	024	- 087	- 364	719
	AT Administrative Intensity (Raw FTE)	-1.30E-02	153	- 035	- 085	933
	PS Professional Sport (FTE)	4.533E-02	117	135	389	700
	SQ Staff Qualification (% of teachers with a Master's degree)	-4.06E-04	005	- 018	- 082	935
	LD Leadership	- 125	115	- 216	-1.081	290

a. Dependent Variable RA Reading Achievement

The sixth model, presented in Table 4.24, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of leadership with the outlier district data removed, but failed to achieve significance ($f = .684$, $p .730$).

Table 4.24

The Variation in Math Achievement as Explained by the Environmental, Organizational, and Leadership, Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.456[a]	.208	- 096	.36402

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	906	10	091	.684	.730[a]
	Residual	3.445	26	133		
	Total	4 351	36			

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.050	1.021		2.986	.006
	FR Fiscal Resources in Millions of thousands dollars	3.342E-04	.000	1.064	1.225	.231
	CP Cost Per Pupil in thousands of dollars	-4.00E-05	.000	-.116	-.380	.707
	DS Disadvantage Students (percent)	7.164E-03	.005	.318	1.363	.185
	MN Number of Minorities	-5.30E-03	.003	-.476	-1.662	.108
	SIZE School Size	-2.53E-03	.002	-1.337	-1.379	.180
	PT Pupil to teacher ratio	1.349E-02	.027	.115	.506	.617
	AT Administrative Intensity (Raw FTE)	.159	.169	.368	.939	.356
	PS Professional Sport (FTE)	5.391E-02	.129	.137	.419	.678
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.57E-03	.005	-.098	-.470	.642
	LD Leadership	-.164	.127	-.243	-1.286	.210

a. Dependent Variable: MA Mathematics Achievement

The seventh model, presented in Table 4.25, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of conflict management with the outlier district data removed, but failed to achieve significance ($f = .415$, $p .926$).

Table 4.25

The Variation in Reading Achievement as Explained by the Environmental, Organizational, and Conflict Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371[a]	.138	-.194	.32540

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.440	10	.044	.415	.926[a]
	Residual	2.753	26	.106		
	Total	3.193	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.339	.965		3.459	.002
	FR Fiscal Resources in Millions of thousands dollars	1.852E-04	000	.688	.772	.447
	CP Cost Per Pupil in thousands of dollars	-1.38E-06	.000	-.005	- 015	.988
	DS Disadvantage Students (percent)	1.447E-03	005	.075	.308	.761
	MN Number of Minorities	-2.29E-03	003	- 239	- 811	.425
	PT Pupil to teacher ratio	-1.04E-03	.025	- 010	- 042	.967
	AT Administrative Intensity (Raw FTE)	2.153E-02	.155	058	.139	.891
	PS Professional Sport (FTE)	2.157E-02	116	064	.186	.854
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.42E-04	005	- 011	- 050	961
	CM Conflict Management	- 275	198	- 280	-1.384	178
	SIZE School Size	-1 08E-03	002	- 664	- 658	516

a. Dependent Variable: RA Reading Achievement

The eighth model, presented in Table 4.26, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of conflict management with the outlier district data removed, but failed to achieve significance (f = .574, p .820).

Table 4.26

The Variation in Math Achievement as Explained by the Environmental, Organizational, and Conflict Variables with the Outlier District Data Removed

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425[a]	.181	- 134	.37028

a. Predictors: (Constant), CM Conflict Management, DS Disadvantage Students (percent), SIZE School Size, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.786	10	.079	574	.820[a]
	Residual	3.565	26	.137		
	Total	4.351	36			

a. Predictors: (Constant), CM Conflict Management, DS Disadvantage Students (percent), SIZE School Size, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.072	1.098		2.797	.010
	FR Fiscal Resources in Millions of thousands dollars	3.813E-04	.000	1.213	1.397	.174
	CP Cost Per Pupil in thousands of dollars	-4.48E-05	000	-.130	-.420	.678
	DS Disadvantage Students (percent)	6.907E-03	.005	.307	1.291	.208
	MN Number of Minorities	-6.19E-03	.003	-.555	-1.931	.065
	SIZE School Size	-2.74E-03	.002	-1.445	-1.470	.154
	PT Pupil to teacher ratio	1.744E-02	028	.149	618	.542
	AT Administrative Intensity (Raw FTE)	.168	177	.390	953	.350
	PS Professional Sport (FTE)	3.514E-02	.132	.090	.267	.792
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.85E-03	006	- 109	- 512	613
	CM Conflict Management	- 192	226	- 168	- 853	.402

a. Dependent Variable: MA Mathematics Achievement

The next model, presented in Table 4.27, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Reading Achievement with the number of minorities data was removed. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.986) found beneath the column for Sig. F Change in row 2 to alpha = .05). The

results also indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.206) found beneath the column for Sig. F Change in row 3 to alpha = .05). None of the models achieved significance (model one f = .413, p .836; model 2 f = .241, p .985; model 3 f = .390, p .939).

Table 4.27

Reading Achievement Reduced Model 1 Compared to Reduced Model 2 and Reduced Model 2 Compared to the Full Model with the Outlier District Data Removed

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.250[a]	.063	-.089	.31074	.063	.413	5	31	.836
2	.272[b]	.074	-.234	.33087	.012	.085	4	27	.986
3	.361[c]	.130	-.204	.32677	.056	1.682	1	26	.206

a. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars, SQ, Staff Qualification (% of teachers with a Master's degree), PT, Pupil to teacher ratio, PS, Professional Sport (FTE), AT, Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars, SQ, Staff Qualification (% of teachers with a Master's degree), PT, Pupil to teacher ratio, PS, Professional Sport (FTE), AT, Administrative Intensity (Raw FTE), TS, Total Score

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.200	5	.040	.413	.836[a]
	Residual	2.993	31	.097		
	Total	3.193	36			
2	Regression	.237	9	.026	.241	.985[c]
	Residual	2.956	27	.109		
	Total	3.193	36			
3	Regression	.417	10	.042	.390	939[c]
	Residual	2.776	26	107		
	Total	3.193	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score

d. Dependent Variable: RA Reading Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.499	656		3.811	001
	FR Fiscal Resources in Millions of thousands dollars	2.457E-04	000	913	1.097	281
	CP Cost Per Pupil in thousands of dollars	1.122E-05	000	038	146	885
	DS Disadvantage Students (percent)	1.076E-03	004	056	279	782
	MN Number of Minorities	-2.14E-03	002	-.224	-.953	348
	SIZE School Size	-1.23E-03	001	-.757	-.857	398
2	(Constant)	2.776	890		3.118	004
	FR Fiscal Resources in Millions of thousands dollars	2.280E-04	000	847	943	354
	CP Cost Per Pupil in thousands of dollars	3.225E-07	000	001	003	997
	DS Disadvantage Students (percent)	5.795E-04	005	030	122	904
	MN Number of Minorities	-1.99E-03	003	-.209	-.697	492
	SIZE School Size	-1.09E-03	002	-.673	-.656	517
	PT Pupil to teacher ratio	-1.12E-02	024	-.111	-.464	646
	AT Administrative intensity (Raw FTE)	-3.67E-02	152	-.099	-.241	811
	PS Professional Sport (FTE)	4.187E-02	117	125	358	723
	SQ Staff Qualification (% of teachers with a Master's degree)	-1.04E-03	005	-.046	-.212	834
3	(Constant)	3.342	981		3.405	002
	FR Fiscal Resources in Millions of thousands dollars	1.845E-04	000	685	765	451
	CP Cost Per Pupil in thousands of dollars	-6.19E-07	000	-.002	-.007	995
	DS Disadvantage Students (percent)	1.615E-03	005	084	340	737
	MN Number of Minorities	-1.98E-03	003	-.208	-.703	488
	SIZE School Size	-1.07E-03	002	-.657	-.649	522
	PT Pupil to teacher ratio	-7.56E-03	024	-.075	-.315	755
	AT Administrative intensity (Raw FTE)	1.534E-02	156	041	099	922
	PS Professional Sport (FTE)	3.804E-02	115	113	330	744
	SQ Staff Qualification (% of teachers with a Masters degree)	-6.85E-04	005	-.030	-.140	890
	TS Total Score	-.232	179	-.252	-1.297	206

a. Dependent Variable: RA Reading Achievement

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics: Tolerance
1	PT Pupil to teacher ratio	-.074[a]	-.342	.734	-.062	.671
	AT Administrative Intensity (Raw FTE)	-.095[a]	-.251	.804	-.046	.216
	PS Professional Sport (FTE)	.071[a]	.227	.822	.041	.320
	SQ Staff Qualification (% of teachers with a Master's degree)	-.037[a]	-.186	.854	-.034	.768
	TS Total Score	-.254[a]	-1.458	.155	-.257	.963
2	TS Total Score	-.252[b]	-1.297	.206	-.246	.884

a. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Dependent Variable: RA Reading Achievement

The next model, presented in Table 4.28, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Math Achievement with the number of minorities data was removed. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.893) found beneath the column for Sig. F Change in row 2 to alpha = .05). The results also indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.233) found beneath the column

for Sig. F Change in row 3 to alpha = .05). None of the models achieved significance (model one f = .876, p .509; model 2 f = .562, p .815; model 3 f = .664, p .746).

Table 4.28

Math Achievement Reduced Model 1 Compared to Reduced Model 2 and Reduced Model 2 Compared to the Full Model with the Outlier District Data Removed

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.352[a]	.124	-.018	35070	.124	.876	5	31	.509
2	.397[b]	.158	-.123	36840	.034	.273	4	27	.893
3	.451[c]	.204	-.103	36508	.046	1.493	1	26	.233

a. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars, SQ, Staff Qualification (% of teachers with a Master's degree), PT, Pupil to teacher ratio, PS, Professional Sport (FTE), AT, Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE, School Size, DS, Disadvantage Students (percent), MN, Number of Minorities, CP, Cost Per Pupil in thousands of dollars, FR, Fiscal Resources in Millions of thousands dollars, SQ, Staff Qualification (% of teachers with a Master's degree), PT, Pupil to teacher ratio, PS, Professional Sport (FTE), AT, Administrative Intensity (Raw FTE), TS, Total Score

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.538	5	.108	.876	.509[a]
	Residual	3.813	31	.123		
	Total	4.351	36			
2	Regression	.687	9	.076	.562	.815[b]
	Residual	3.664	27	.136		
	Total	4.351	36			
3	Regression	.886	10	.089	.664	.746[c]
	Residual	3.465	26	.133		
	Total	4.351	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score

d. Dependent Variable: MA Mathematics Achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	2.714	.740		3.668	001
	FR Fiscal Resources in Millions of thousands dollars	4.120E-04	000	1.311	1.631	113
	CP Cost Per Pupil in thousands of dollars	-1.86E-05	000	- 054	- 214	832
	DS Disadvantage Students (percent)	4.019E-03	004	178	923	363
	MN Number of Minorities	-4.33E-03	003	- 388	-1 708	098
	SIZE School Size	-2.15E-03	002	-1 133	-1 326	194
2	(Constant)	2.678	991		2.701	012
	FR Fiscal Resources in Millions of thousands dollars	4.113E-04	000	1 309	1 527	138
	CP Cost Per Pupil in thousands of dollars	-4 36E-05	000	- 127	- 411	685
	DS Disadvantage Students (percent)	6 298E-03	005	280	1 194	243
	MN Number of Minorities	-5 98E-03	003	- 537	-1.881	071
	SIZE School Size	-2 75E-03	002	-1 450	-1 483	150
	PT Pupil to teacher ratio	1 033E-02	027	088	385	703
	AT Administrative Intensity (Raw FTE)	128	169	296	754	458
	PS Professional Sport (FTE)	4 937E-02	130	126	380	707
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.41E-03	006	- 130	- 620	540
3	(Constant)	3.273	1 097		2.985	006
	FR Fiscal Resources in Millions of thousands dollars	3.655E-04	000	1 163	1.356	187
	CP Cost Per Pupil in thousands of dollars	-4 46E-05	000	- 129	- 424	675
	DS Disadvantage Students (percent)	7 388E-03	005	328	1.393	175
	MN Number of Minorities	-5 97E-03	003	- 536	-1 895	069
	SIZE School Size	-2.72E-03	002	-1.436	-1.462	150
	PT Pupil to teacher ratio	1 414E-02	027	121	528	602
	AT Administrative Intensity (Raw FTE)	182	174	422	1 050	303
	PS Professional Sport (FTE)	4 534E-02	129	116	352	728
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.03E-03	005	- 116	- 556	583
	TS Total Score	- 244	200	- 227	-1 222	233

a. Dependent Variable: MA Mathematics Achievement

						Collinear y Statisti
1	PT Pupil to teacher	Beta	t	Sig.	Partia Correlati	Tolerance
	AT Intensity (Raw	.21 [a]	.58	.56	.10	.21
	PS Professional (FTE	.12 [a]	.41	.68	.07	.32
	SQ Staff (% of teachers Master's	- [a]	-	63	-	.76
	TS Total	- [a]	-	.30	-	.96
2	TS Total	- [b]	-	.23	-	.88

a.

b. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR

c. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Millions of thousands dollars, SQ Staff Qualification (% of teachers with a

Comparison of Results to The Findings of Bidwell and Kasarda

Both similarities and differences can be seen when one analyzes the results of the researcher's study and those found by Bidwell and Kasarda. Table 4.29 compares the significant findings in each study.

Table 4.29

Comparison of Results to The Findings of Bidwell and Kasarda

Variable	McLellan & West	Bidwell & Kasarda
Staff Qualifications	Non-significant RA & MA	Significant RA only
Pupil Teacher ratio	Non-significant RA & MA	Significant RA & MA
Prof. Support	Non-significant RA & MA	Non-significant RA & MA
Admin. Intensity	Non-significant RA & MA	Significant RA & MA
Minorities	Non-significant RA & MA	Significant RA & MA

Bidwell and Kasarda found that the better qualified the certificated staff the higher the levels of reading and math achievement but their findings regarding math achievement were not statistically significant. This study found no significant correlation

between these variables. Bidwell and Kasarda found that as pupil teacher ratios declined across districts the median achievement scores rose. This study found no significant correlation between these variables. Bidwell and Kasarda found that the effect of professional staff support on math achievement was slight, on reading achievement positive, but not statistically significant. This study found no significant correlation between these variables. Bidwell and Kasarda found that as administrative intensity rose achievement scores declined. This study found no significant correlation between these variables. Bidwell and Kasarda found that the percentage of non-white students in a district had a depressing effect on median levels of student achievement. This study found no significant correlation between these variables.

Research Questions

1. Did organizational characteristics contribute to district achievement levels and if so, how much of the variation in achievement was explained by these organizational characteristics? According to data obtained in this study organizational characteristics did not have a significant impact on district achievement levels in math or reading.
2. Did environmental conditions of the district contribute to district achievement levels and if so, how much of the variation in achievement was explained by these environmental conditions? According to data obtained in this study environmental characteristics did not have a significant impact on district achievement levels in math or reading.
3. Did conflict between the superintendents and principals of small Nebraska rural schools contribute to district achievement levels and, if so, how much of the

variation in achievement was explained by variation in the degree of conflict? According to data obtained in this study the level of conflict between the superintendent and principal did not have a significant impact on district achievement levels in math or reading.

4. Did measures of organizational health contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of organizational health? According to data obtained in this study measures of organizational health did not have a significant impact on district achievement levels in math or reading.

5. How much additional explanatory power was created by the addition of the independent variable of conflict between the superintendent and principal? According to data obtained in this study the explanatory power of this study was not increased by the addition of the independent variable of conflict between the superintendent and principal.

Chapter 5

Summary, Implications, and Recommendations

Summary of the Study

Bidwell & Kasarda (1975) used data from 104 school districts in Colorado to examine determinants of organizational effectiveness. For each of these districts five environmental conditions, three components of district structure, and one of staff composition were linked in a causal model to the median reading and mathematics test scores of the district's high school students. The environmental conditions were size, fiscal resources, percent non-white in the population of the district's community, and the education and income levels of the parental risk population. The measures of district structure were pupil-teacher ratio, administrative intensity and the ratio of supporting professional staff to teachers. The staff composition variable was qualification level of the professional staff.

This study differed from the Bidwell & Kasarda (1975) study in several ways. Environmental variables were similar with a few exceptions, but parental education level was not examined in this study. The school districts in the Bidwell & Kasarda (1975) study ranged from small districts to very large districts. This study involved only relatively small rural school districts. Bidwell & Kasarda (1975) used the median reading and mathematics achievement test scores of the district's high school students. This study used a weighted average score to represent each school district's K-12 reading and mathematics achievement test scores. In an attempt to increase the explanatory power of the Bidwell & Kasarda (1975) study, this study also analyzed additional variables thought

to relate to achievement. Measurement of these two additional variables was accomplished by developing an organizational health survey.

This study had two purposes. The first and over-riding purpose was to examine school district variables in terms of their contribution to student achievement. The second purpose was to examine whether the questions on the instrument measured general levels of leadership and conflict and what effect, if any, these levels had on student achievement. The researcher was interested in studying the aforementioned impact in order to offer suggestions to help improve leadership in Nebraska public school districts.

Research Questions:

1. Was there a statistically significant relationship between environmental variables of the school district (size, fiscal resources, number of minorities, cost per pupil, number of disadvantaged students) and achievement levels?
2. Was there a statistically significant relationship between organizational variables (pupil-teacher ratio, administrative intensity, numbers of professional support staff, and certificated staff qualifications) and achievement levels?
3. Was there a statistically significant relationship between the variables of instructional leadership and conflict within a district, as measured by the Organizational Health Survey subscale and achievement levels?
4. Was there additional explanatory power created by the addition of the independent variables of district leadership and conflict?

5. Was there a statistically significant relationship between the organizational health variables and achievement variables?

Summary of Findings

Relationship to Bidwell and Kasarda Study

Results from Bidwell & Kasarda (1975) indicated that increases in pupil-teacher ratio and administrative intensity depressed median levels of achievement: whereas, higher staff qualifications fostered increased student achievement. As pupil-teacher ratios declined across districts, the two median achievement scores rose. In contrast, this study found no statistically significant correlation between pupil-teacher ratio and achievement. While the findings of this study did not support Bidwell & Kasarda's findings, there have been many studies that have resulted in similar findings (Cohen, G. et all, 2000; Hanushek, E. A., 2000; Krueger, A.B., 2000; Lazear, E., 1999; Bohrnstedt, G.W. & Stecher, B.M., 1999; Lotherham, A., 1999; and Stemnock, S., 1974). Educators have heard for many years that fewer students per class should lead to more individualized instruction, and thus improved achievement as noted in Bidwell & Kasarda (1975). "The more students a teacher must handle during a class session, the less refined the teacher's response to students is likely to be"(Bidwell & Kasarda, 1975). The greater the teacher's classroom "span of control," the poorer the daily decisions in teaching. If we assume that student achievement is some positive function of the rates of interaction between teacher and student, then the more pupils per teacher the lower the aggregate level of achievement should be (Bidwell & Kasarda, 1975). The findings of the two studies may indicate that there is an optimal pupil-teacher ratio. If pupil-teacher ratio in a school district is too high, scores may go down. If the pupil-teacher ratio is too small, scores

may go down. Thus, conclusions about the impact of size on achievement must be guarded.

Bidwell & Kasarda (1975) believed that as the relative size of the administrative component increased, human resources would be diverted from instruction at a rate not overcome by the contribution of administration to instructional effectiveness. Consequently, levels of student achievement would be negatively affected by increasing levels administrative intensity. This study found no statistically significant relationship between administrative intensity and student achievement.

Bidwell & Kasarda (1975) found a statistically significant relationship between staff qualifications and reading achievement but not math achievement. This study found no statistically significant relationship between staff qualifications and student achievement. This researcher shares Bidwell and Kasarda's opinion that if educators are willing to entertain the possibility that a teacher's qualifications are in fact related to teaching skill, then the teacher-intensive character of instruction implies that the greater the proportion of well-qualified teachers in a school district, the higher the district's level of student achievement. There are many studies that support this belief (Wenglinsky, H., 2000; Goldhaver, D. D. & Brewer, D.J., 2000; Raymond, M., Fletcher, S., & Luque, J., 2001; Hawk, P., Coble, C.R., & Swanson, M., 1985; and Fetler, M., 1999). The lack of statistical significance in math achievement may have resulted from measurement error. This may also be explained by the possibility that the development of mathematical skills is not as responsive to the aggregate qualifications of teachers and other key personnel as are reading skills.

Bidwell & Kasarda found the effects of professional support staff on district levels of achievement were even weaker than they had predicted. The effect of this variable on mathematics achievement was slight. on reading achievement positive but not statistically significant. This study found no correlation between professional support staff and student achievement.

Of the environmental conditions used by Bidwell & Kasarda (1975). only percent non-white had consistently significant direct effects on median achievement levels. But other environmental conditions (resources especially) have important indirect effects on achievement via their direct effects on school district structure and staff qualifications.

Initially. the data yielded a strong negative correlation between the number of minorities and student achievement. As with Bidwell & Kasarda (1975). the results from this study indicated that the number of minorities had a depressing effect on student achievement. This finding is discussed further in the Relationship of Variables Section.

This study showed no statistically significant correlation between student achievement and the number of disadvantaged students while the Bidwell & Kasarda (1975) study found a negative correlation. Bidwell & Kasarda (1975) believed that students from so-called disadvantaged families tend to be less motivated and less able. Therefore. if a district seeks a more–than-minimal standard of achievement for all of its pupils. the presence of high proportions of such students may require a district to provide competent teachers and such professional services as remedial reading programs (Bidwell & Kasarda. 1975). Since this study indicated an even stronger correlation between student achievement and the number of disadvantaged students. this researcher concurs

with Bidwell and Kasarda regarding the importance of competent teachers and remedial programs.

There was a positive correlation between fiscal resources and reading and math achievement, even though their direct effects were small, according to Bidwell & Kasarda (1975). In contrast, this study found no statistically significant correlation between student achievement and fiscal resources. The results reflect a failure to examine dependencies among environmental and organizational properties of school districts and the consequences for student achievement of these dependencies. It also appears that this study fails to give clear evidence of the fact that as school districts command more money they hire more and better-qualified front-line staff, investing in both teachers and supporting professional specialists. The results of this study also run contrary to the belief that at the district level, at least so far as investment in teachers is concerned, the availability of revenues has important consequences for student achievement (Odden, A., 2001; Hendrie, C., 1999; Miles, K.H. & Darling-Hammond, 1998; Bidwell & Kasarda, 1975;).

Bidwell & Kasarda (1975) found that district size, had, over-all, a very slight effect on student achievement, whether reading or math. Their study appeared to indicate the mixed blessings of large school districts. Other studies have also shown that in terms of raising achievement, reducing class size does not guarantee success (Johnson, 2000). The wisdom of many in this country speaks to the notion that larger school districts do a better job of instruction because of the amount and diversity of resources for instruction (Conant, 1967). This study found no statistically significant correlation between size and math and reading achievement. These results would not appear to support the proponents

of class size reduction who claim that small classes result in fewer discipline problems and allow teachers more time for instruction and individual attention and more flexibility in instructional strategies (Halbach, Ehrle, Zahorik, & Molnar, 2001). The findings of the two studies may indicate that there is an optimal range for district size. If the size of the district is too large, scores may go down. If the size of the district is too small, scores may go down. Thus, conclusions about the impact of district size on achievement must be guarded. It is one thing to point out the findings of this study; quite another to claim that this is the way it works in the real world of K-12 education.

Relationship of Variables

This study did have significant findings. However, when looking at the data it was noticed that one school district had a much larger percentage of minority students than the remainder of the districts in the study. As a result, it was necessary to reanalyze the data after removing the aforementioned district.

Initially, there was a statistically significant relationship between the Organizational health Survey variables and district math achievement levels. However, when the variables were analyzed separately, only the organizational structure and human resource management variables were significantly related to district math achievement levels. The initial results indicated that a higher degree of appropriate utilization of human resources resulted in lower district math achievement scores. The more appropriate the district's organizational structure, the higher the district math achievement scores. When these results were reanalyzed, with the outlier district data removed, the model no longer worked. Also, significance was not obtained in the model using the same independent variables regressed against reading achievement.

Initially, there was a statistically significant negative relationship between the environmental variable of the number of minorities and district math and reading achievement levels. The results indicated that the greater the number of minority students, the lower the math and reading achievement scores. When these results were reanalyzed, with the outlier district data removed, there was no longer a statistically significant relationship between the environmental condition of the number of minorities and district math and reading achievement levels.

There were no statistically significant relationships between organizational characteristics (pupil-teacher ratio, administrative intensity, numbers of professional support staff, and certificated staff qualifications) and district math and reading achievement levels.

There were no statistically significant relationships between instructional leadership or conflict levels within a district, as measured by the Organizational Health Survey subscale and district math and reading achievement levels.

When reviewing the correlations between reading and math achievement and the environmental and organizational variables, there are both similarities and differences when compared to the study conducted by Bidwell & Kasarda (1975). Both studies found a predictable high positive correlation between reading achievement and math achievement. Both studies found a positive correlation between achievement and staff qualifications, but this study showed a much weaker correlation. Both studies found a correlation between reading and math achievement and pupil teacher ratio. However, Bidwell & Kasarda found a negative correlation while this study showed a positive, but weak correlation. Both studies found a negative correlation between reading and math

achievement and administrative intensity. A weak correlation between reading and math achievement and size was found in both studies. However, in this study a negative correlation was found in reading achievement and size whereas Bidwell and Kasarda found a positive correlation between these variables. Both studies found a negative correlation between reading and math achievement and number of minorities. While this study originally found a statistically significant negative correlation, which was not the case in Bidwell and Kasarda's findings, the removal of the outlier district in this study resulted in findings much more in line with the results obtained by Bidwell & Kasarda. Both studies found a negative correlation between reading and math achievement and the number of disadvantaged students, but this study found a stronger negative correlation.

When reviewing the correlations between the organizational and environmental variables there are both similarities and differences when compared to the study conducted by Bidwell & Kasarda (1975). Both studies found a positive correlation between pupil teacher ratio and staff qualifications. Both studies found a positive correlation between professional support staff and teacher qualifications. However, this study found the correlations to be statistically significant while Bidwell & Kasarda did not. Both studies found a positive correlation between professional support staff and pupil teacher ratio. However, this study found the correlations to be statistically significant while Bidwell & Kasarda did not. This study found a positive correlation between administrative intensity and the variables of teacher qualifications, pupil teacher ratio, and professional support staff with professional support staff being statistically significant. Bidwell & Kasarda found a negative correlation between administrative intensity and these variables and none were found to be statistically significant. This

study found a positive correlation between size and the variables of teacher qualification, pupil teacher ratio, professional support staff, and administrative intensity with staff qualifications, pupil teacher ratio, professional support and administrative intensity all being statistically significant. Bidwell & Kasarda found a positive correlation between size and the variables of teacher qualifications, pupil teacher ratio, and professional support. They found a negative correlation between size and administrative intensity. They found the variables of administrative intensity, pupil teacher ratio, and teacher qualifications to be statistically significant. This study found a negative correlation between minorities and teacher qualifications and pupil teacher ratio. A positive correlation was found between minorities and professional support, administrative intensity, and size with administrative intensity being statistically significant. Bidwell & Kasarda found positive correlations between minorities and teacher qualifications, pupil teacher ratio, size, and disadvantaged students. They found negative correlations between minorities and professional support staff, administrative intensity, and fiscal resources. This study found a positive correlation between disadvantaged students and number of minorities. This correlation was statistically significant. A negative correlation was found between the variables of disadvantaged students and teacher qualifications, pupil teacher ratio, professional support staff, administrative intensity, and size. None of these variables were found to be statistically significant. Bidwell and Kasarda found negative correlations between disadvantaged students and teacher qualifications, pupil teacher ratio, professional support staff, size, and fiscal resources. Teacher qualifications were found to be statistically significant. They found a positive correlation between disadvantaged students and administrative intensity, but it was not statistically

significant. This study found a positive correlation between fiscal resources and teacher qualifications, pupil teacher ratio, professional support staff, administrative intensity, size, number of minorities, and the number of disadvantaged students. The variables of pupil teacher ratio, professional support staff, administrative intensity, and size were statistically significant. Bidwell & Kasarda found a positive correlation between fiscal resources and the variables of teacher qualifications, pupil teacher ratio, professional support staff, and administrative intensity. Teacher qualifications, pupil teacher ratio, and professional support staff were statistically significant. A negative correlation was found between fiscal resources and size.

When reviewing the correlations between reading and math achievement and the organizational health variables, there is only one statistically significant correlation. There was a positive correlation between math achievement and creativity. However, all items on the survey are statistically significantly correlated to one another. As a result, given the high correlations of all the items caution must be used when interpreting this as a statistically significant result. Also, as previously indicated, this researcher believed that leadership would have a statistically significant impact on achievement levels. The fact that this belief is not supported could be due to the high correlation of all items on the survey. As a result, the researcher believes further research on this topic is warranted.

Implications of the Study

As in most secondary analyses, the measures in this study are deficient in certain respects. In addition to the well-documented disadvantages of standardized achievement tests for measuring "true scores" on individual and group achievement, Nebraska does not use uniform state-wide standardized achievement testing. Most of the districts in this

study used the California Achievement Test. Terra Nova Test. Comprehensive Test of Basic Skills. and the Iowa Test of Basic Skills. All achievement test results were normed. however. by the national distribution of performance by grade on the particular test administered by each school district. National norming by grade level improves comparability of group achievement across school districts. though not as much as the researcher would have preferred.

This researcher's comments are tentative. since the coefficients that have been reported are modest in some areas and insignificant in others. This study could not control for several pertinent student inputs. Nevertheless. to argue that little can be done through the formal organization of schooling to affect students' academic attainment is. in the light of this study. premature. If the findings of this study are sustained by further work. eight will have direct bearing on steps that may be taken at the school district level to maximize aggregate levels of student academic achievement.

First. while this study found no statistically significant relationship between staff qualifications and student achievement the author believes that well-qualified teachers in large relative numbers will stand as a potent resource for schooling. This statement may be a truism. but it is often forgotten.

Second. the results of this study indicate that there was no statistically significant relationship between pupil-teacher ratio and student achievement. These results would seem to be in direct conflict with the widely held beliefs of small school advocates that low pupil-teacher ratios are essential for increased student achievement. The findings of this study maybe due to the fact that most of the schools selected were relatively the same

size. As a result, the pupil-teacher ratios in most of the schools were similar. Also, this study used a relatively small sample size.

Third, this study found no statistically significant relationship between professional support staff and student achievement. These results reflect the researcher's belief that support staff perhaps provide too little information to teachers that is consistently used, tend not to work directly with students, or center their efforts at the extremes of the student distributions (e.g., the most or least able). According to Bidwell & Kasarda, professional support staff may also, in fact, lack effective techniques to foster the academic work of either students or teachers.

Fourth, the results of this study indicated no statistically significant relationship between administrative intensity and student achievement. While this study did not find a significant relationship between these variables, it is the researcher's belief that as money is diverted from learning opportunities for students (i.e. instruction, highly qualified staff, etc) to administrative costs, achievement will decline.

Fifth, the results of this study indicated no statistically significant relationship between increasing district fiscal resources and student achievement. Despite this finding, due to the limited nature of this study, the researchers supports the argument made by many educators that the more a school district spends, the better will be its teachers and services and the more achievement will increase.

Sixth, the results of this study indicated no statistically significant relationship between school district size and student achievement. Yet, a "sacred cow" of the small school proponents is that smaller schools mean better learning. That may be, but if one

defines learning as performance on standardized tests. this study cannot support that claim.

Seventh. the initial results of this study indicated that the number of minorities has a negative effect on student achievement. However. it was found that these results were mainly due to the data obtained from one school district involved in the study. The school in question was a reservation school and thus the findings of this study would indicate that various issues in this particular school were the cause of the initial statistically significant relationship. The researcher believes that lower achievement scores in this district were the result of reservation schools dealing with a higher number of social ills than other schools in the study.

Lastly. the results of this study indicated no statistically significant relationship between the number of disadvantaged students and student achievement. Despite this finding. the researcher believes that disadvantaged students come to school less prepared and motivated than peers from wealthier families. Schools with large numbers of disadvantaged students will need to address student needs through remedial programs in order to increase student achievement.

Recommendations for Further Research

1. The researcher discovered that all of the variables being measured by the School District Organizational Health Survey were very highly correlated to each other. In order to validate the findings of this study research that uses enough subjects to permit factor analysis should be completed.
2. Replicate the study using a larger number of schools. By increasing the school district sample size the researcher believes that the results would more accurately

reflect whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.

3. Replicate the study using a larger number of teacher responses from each school district. By increasing the number of respondents from each school district the researcher believes that the results would more accurately reflect whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.
4. Replicate the study using a more statistically sound procedure for comparing student achievement scores than the one used in this study. School districts in this study used different standardized achievement tests for measuring student achievement. While national norming by grade level improves comparability of achievement scores across school districts, it does not do so to the extent that the researcher would wish. Future research should be attempted that uses a common student achievement indicator among all school districts. By doing so the researcher believes that the results would more accurately reflect whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.
5. Replicate the study using an instrument that more effectively measures the variable of educational leadership. As previously noted, the researcher hypothesized that there would be a significant relationship between educational leadership and student achievement. The results of this study did not support this belief. The researcher discovered that all of the variables being measured by the

School District Organizational Health Survey were very highly correlated to each other. This could be the reason there were no significant findings in regards to the variable of educational leadership. And therefore, future studies using appropriate instrumentation are needed in order to support the researcher's continued belief that educational leadership positively impacts student achievement.

6. Simplistic methods can not be used to analyze multiple variables and their effect on student achievement within school districts. Further research studies investigating individual variables rather than multiple variables are needed to assess their impact on student achievement. Do to the complex nature of the learning process, caution should be used when interpreting data such as that reported in this study.
7. The unit of analysis for further study should originate at the building level. Due to the variation in size of school districts across Nebraska, the effects that specific variables might have on student achievement might be masked in larger school districts.
8. The results of this study point to the need for the Nebraska State Department of Education to develop a more sound method of gathering student achievement data. The effectiveness of education in Nebraska schools can be improved with data that can be statistically analyzed. Current data reported in the Nebraska State Report Card does not meet this criterion.

Bibliography

Achilles, C.M., Young, R., & High, R. (1985). Tracking the implementation of three years of effective schooling elements in Project SHAL. Paper at AERA. Chicago, IL.

Airasian, P. (1987). State mandated testing and educational reform: Context and questions. American Journal of Education, 95, 393-412.

Andersen, A. (1997). Annual report on the Jersey City and Paterson Public Schools. Prepared for the New Jersey Legislature Joint Committee on the Public School.

Anderson, L.W., & Soniak, L.A. (1994). Bloom's taxonomy. Chicago, IL: University of Chicago Press.

Applebee, A.N., Langer, J.A., & Mullis, I.V.S. (1990). Crossroads in American education. Princeton, NJ: Educational Testing Service.

Armor, D. (1976). Analysis of the school preferred reading program in selected Los Angeles minority schools. Santa Monica: Rand Corporation.

Astuto, T.A. & Clark, D.L. (1985). Strength of Organizational coupling in the Instructionally Effective School. Urban Education, 19, (4), 321-356.

Austin, G.R. (1979). An analysis of outlier exemplary schools and their distinguishing characteristics. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA.

Austin, G.R. (1981). Exemplary schools and their identification. Unpublished manuscript, University of Maryland, Center for Educational Research and Development, Baltimore, MD.

Ayres, L.P. (1909). Laggards in our schools: a study of retardation and elimination in city school systems. New York: Charities Publication Committee.

Bagley, W.C. (1910). Classroom management; its principles and technique. New York and London: The Macmillan Company.

Balderson, J.H. (1977). Who Likes the "Good" School? The Canadian Administrator, 16, 1-4.

Barth, R.S. (1990). Improving schools from within. San Francisco: Jossey-Bass Inc.

Bidwell, C.E. & Kasarda, J.D. (1975). School district organization and student achievement. American Sociological Review, 40, 55-70.

Bohrnstedt, G.W. & Stecher, B.M. (1999). Class size reduction in California: Early evaluation findings, 1996-1998. RAND Distribution Services: Santa Monica, CA.

Bridges, E. (1977). The nature of leadership. In Educational Administration: the developing decades, edited by L. Cunningham, W. Hack, and R. Nystrand. Berkeley, CA.: McCutchan.

Brookover, W.B., & Lezotte, L.W. (1979). Changes in school characteristics coincident with changes in student achievement: Executive summary. East Lansing, MI: Institute for Research on Teaching, Michigan State University.

Brubaker, D., & Coble, L. (1997). Staying on track: An educational leader's guide to preventing derailment and ensuring personal organizational success. Thousand Oaks, CA: Corwin Press, Inc.

Bullard, P. & Taylor, B.A. (1993). Making school reform happen. Boston, MA: Allyn and Bacon.

Callahan, R.E. (1962). Education and the cult of efficiency: a study of the social forces that have shaped the administration of the public schools. Chicago and London: The University of Chicago Press.

Cameron, K. (1978). Measuring Organizational Effectiveness in Institutions of Higher Education. Administrative Science Quarterly, 23, 604-632.

Cameron, K. (1984). The Effectiveness of Ineffectiveness. Research in Organizational Behavior, 6, 235-285.

Campbell, J.P. (1977). On the nature of organizational effectiveness. In New perspectives on organizational effectiveness, edited by Paul S. Goodman, 174-184, San Francisco: Jossey-Bass.

Carter, C., & Klotz, J. (1990). What principals must know before assuming the role of instructional leader. NASSP Bulletin, 74, (525), 36-41.

Case, D.R. (1931). The Platoon School in America (Stanford, CA)

Chubb, J.E. & Moe, T.M. (1990). What price democracy: Politics, markets, and America's schools. Washington, D.C.: Brookings Institute.

Clark, D.L. (1981). A sampler of alternative perspectives and models for viewing educational organizations, in D.L. Clark et al.(eds.) Alternative Perspectives for Viewing Educational Organizations. San Francisco: Far West Laboratory for Educational research and Development.

Cohen, C., Miller, C., Stonehill, R., & Geddes, C. (2000). The class-size reduction program: Boosting student achievement in schools across the nation. U.S. Department of Education.

Cohen, D.K. (1987). Schooling more and liking it less: Puzzles of educational improvement. Harvard Educational Review, 57, 174-177.

Cohen, M. & Manasse, L.A. (1982). Effective principals. School Administrator, 30,(10). P.14-16.

Coleman, J.S., Campbell, E.O., Hobson, C.J., McPartland, J., Mood, A.M., Weinfield, F.D., & York, R.L. (1966). Equality of Educational Opportunity. Washington, DC: U.S. Office of Education, National Center for Educational Statistics.

College Board. (1983). Academic preparation for college. New York: The College Board.

Conant, J.B. (1967). The comprehensive high school: A second report to interested citizens. New York: McGraw-Hill.

Connolly, T., Conlan, E.J., & Deutsch, S.J. (1980). Organizational Effectiveness: A Multiple-Constituency Approach. Academy of Management Review, 5, 211-217.

Cuban, L. (1983). Effective schools: A friendly but cautionary note. Phi Delta Kappan, 64, p. 695-696.

Cuban, L. (1984). Transforming the Frog into a Prince: Effective Schools Research, Policy, and Practice at the District Level. Harvard Educational Review, 54,129-151.

Cubberley, E.P. (1916). Public School Administration. New York, Houghton Mifflin Co.

Deal, T.E. (1985). National commissions: Blueprints for remodeling or ceremonies for revitalizing public schools? Education and Urban Society, 17, 145-146.

Dey, M.L. (1985). Review of organizational health survey. In J.V. Mitchell Jr. (Ed.). The Ninth Mental Measurements Yearbook(1100-1101). Lincoln, NE: University Of Nebraska Press.

Doll, R.C. (1969). Variations among inner city elementary schools. Kansas City, MO: University of Missouri-Kansas City, School of Education.

Edmonds, R.R. (1979a). Effective schools for the urban poor. Educational Leadership, 37, 15-27.

Edmonds, R.R. (1979b). Some schools work and more can. Social Policy, 9, 28-32.

Edmonds, R.R. (1981). Making public schools effective. Social Policy, 12, 56-60.

Edmonds, R.R. (1989). School Improvement based on the effective schools research. A paper presented at the 7th annual National Effective School Conference. January 1990.

Etzioni, A. Two approaches to organizational analysis: A critique and suggestion. Administrative Science Quarterly, 5, 257-278.

Eubanks, E.E., & Levine, D.U. (1983). A first look at effective school projects in New York City and Milwaukee. Phi Delta Kappan, 64(10), 697-702.

Felsenthal, H. (1982). Factors influencing school effectiveness: An ecological analysis of an "effective" school. Paper presented at the Annual Meeting of the American Educational Research Association. New York, New York. (March 19-23).

Fetler, M. (1999). High school staff characteristics and mathematics test results. Education Policy Analysis Archives,7 (9): http://epaa.asu.edu/epaa/v7n9.html.

Flanigan, J. (1990). The principal of the 90's: Changing expectations realized? Paper presented at the Annual Meeting of the National Council of Professors of Educational Administration. Los Angeles, CA.

Firestone, W.A., & Herriott, R.E. (1982). Prescriptions for effective elementary schools don't fit secondary schools. Educational Leadership, 40, 51-53.

Fullan, M.G. (1991). The new meaning of educational change. New York: Teacher College press.

Fullan, M.G. & Miles, M.B. (1992). Getting reform right: What works and what doesn't. Phi Delta Kappan, 73, (10).745-752.

Gersten, R.: Carnine: & Green. (1982). The principal as instructional leader: a second look. Educational Leadership, 40, (3), 437-50.

Gibson, J.L., Ivancevich, J.M., & Donnelly, J.H. (1976). Organizations: Behavior, structure, and processes. Dallas, TX: Business Publications.

Glenn, B. (1981). What works? An examination of effective schools for poor black children. Cambridge MA: Harvard University Center for Law and Education.

Goldhaber, D.D. & Brewer, D.J. (1998, October). When should we reward degrees for teachers? Phi Delta Kappan: 134-138.

Goldman, E. (1998). The significance of leadership style. Educational Leadership, (7), 20-23.

Goodman, P.S. & Pennings, J.M. (1977). Toward a workable framework. In New perspectives on organizational effectiveness, edited by Paul S. Goodman and Johannes M. Pennings, 174-184, San Francisco: Jossey-Bass.

Grady, M.L., Wayson, W. W., Zirkel, P.A. (1989). A review of effective schools research as it relates to effective principals. UCEA Monograph Series, Tempe, AZ.

Greenfield, W. (1987). Instructional leadership: concepts, Issues, and controversies. Allyn & Bacon, Inc. Newton, MA.

Good, T.L., & Brophy, J.E. (1985). School effects. (Occasional Paper No. 77). East Lansing, MI: Michigan State University, The Institute for Research on Teaching.

Halbach, A., Ehrle, K., Zahorik, J., & Molnar, A.(2001, March). Class size reduction: From promise to practice. Educational Leadership, 58, (6), 32-35.

Haley, M. (1924). The New Republic

Hall, R.H. (1972). Organizations: Structure and Process. Englewood Cliffs, NJ: Prentice-Hall.

Hall, R.J. (1980). Effectiveness theory and organizational effectiveness. Journal of Applied Behavior Science, 16, 536-545.

Hallinger, P., 7 Murphy, J. (1982). The superintendent's role in promoting instructional leadership. Administrators Notebook, 30, (6).

Hanushek, E.A. (1978). A Reader's Guide to Educational Production Functions. Paper presented at the Conference on School Organization and Effects, National Institute of Education.

Hanushek, E.K. (1989). The Impact of Differential Expenditures on School Performance. Educational Researcher, 62, 45-51.

Hanushek, E.A. (2000, October). Evidence, politics, and the class size debate. Working Paper No. 121.

Hart, A.W. (1993). Principal succession, establishing leadership in schools. State University of New York Press, Albany.

Hawk, P., Coble, C.R., & Swanson, M. (1985). Certification: It does matter. Journal of Teacher Education, 36(3): 13-15.

Hayley, M. (1924). The factory system. New Republic, XL, (11), 18.

Heck, R.H., & Marcoulides, G.A. (1993, May). Principal leadership behaviors and school achievement. NASP Bulletin, 2-28.

Hendrie, C. (1999). Poor districts fare worst on N.Y. assessment. Education Week, http://www.edweek.com/ew/ew_printstory.cfm?slug=38ny.h18.

Hoy, W.K. & Miskel, C.G. (1991). Educational administration: Theory, research, practice.: McGraw-Hill, Inc.

Jencks, C.S., Smith, M., Ackland, H., Bane, M.J., Cohen, D., Gintis, H., Heyns, B., & Michelson, S. (1972). Inequality: A reassessment of the effect of family and schooling in America. New York, NY: Basic Books.

Johnson, K. (2000, June). Do small classes influence academic achievement? What the National Assessment of Educational Progress shows (CDA Report No. 00-07). Washington, DC: Heritage Foundation.

Kanter, R. & Brinkerhoff, D. (1981). Organizational Performance: Recent Developments in Measurement. Annual Review of Sociology, 7, 321-349.

Katz, D. & Kahn, R.L. (1966). The social psychology of organizations. New York: Wiley.

Keeley, M. (1984). Impartiality and Participant-Interest Theories of Organizational Effectiveness. Administrative Science Quarterly, 29, 1-25.

Klitgaard, R.E., & Hall, G.R. (1974). Are there unusually effective schools? Journal of Human Resources, 74, 90-106.

Koll, R., Lampe, S., & Hegedus, D. (1996). The practical side of research: Studying administrative leadership. NASSP Bulletin, 80 (578), 102-113.

Kozberg, G. & Winegar, J. (1981). The South Boston story: Implications for secondary schools. Phi Delta Kappan, 62, 565-569.

Krueger, A.B. (2000, October). Understanding the magnitude and effect of class size on student achievement. Working Paper No. 121.

Lau, L.J. Education production Functions. Paper presented at the Conference on School Organization and Effects, National Institute of education.

Lazear, E. (1999). Forth coming: educational production. Quarterly Journal of Economics, 114(2): 497-532.

Levine, D.U. & Stark, J. (1982). Instructional and organizational arrangements that improve achievement in inner-city schools. Educational Leadership, 40, (3), 41-48.

Levine, D.U., Levine, R.F., and Eubanks, E.E. (1984). Characteristics of effective inner city intermediate schools. Phi Delta Kappan, 65, 707-711.

Levine, M.G. (1990). Update on effective schools: findings and implications from research and practice. Journal of Negro Education, 59, (4), 577-84.

Levine, D.U. & Lezotte, L.W. (1995). Effective schools research. In handbook of research on multicultural education, edited by James A. Banks and Cherry A. Banks. New York: MacMillan.

Levine, D.V., & Levine, R.F. (1996). Society and education. Needham, MA: Allyn & Bacon.

Lezotte, L.W. (1983). What is the effective schools movement? The Effective Schools Report, 1:1.

Lezotte, L.W. (1986, April). School effectiveness: Reflections and future directions. A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA (ERIC Document Reproduction Service No. ED 274 047).

Lezotte, L.W. (1989). Base school improvement on what we know about effective schools. American School Board Journal, 176, (8), 18-20.

Lezotte, L. W. (1990). Correlates of effective schools: As described by Ronald Edmonds and Lawrence W. Lezotte. A paper presented at the 7th Annual National Effective School Conference.

Lezotte, L.W., & Levine, D. (1990). Unusually effective schools: A review and analysis of research and practice. National Center for Effective Schools Research and development. (ERIC Document Reproduction Service. No. ED 330032.

Lezotte, L.W. (1994). The nexus of instructional leadership and effective schools. The School Administrator, 51, (3), 20-23.

Lipham, J.A. (1964). Leadership and administration. In D. Griffiths (Ed.), Behavioral science and educational administration, Sixty-Third Yearbook of the National Society for the Study of Education (119-141). Chicago: University of Chicago Press.

Mace-Matluck, B. (1990). The effective schools movement: Its history and context. A paper presented at the 7th Annual National Effective School Conference.

Madaus, G.F., Airasian, P.W., & Kellaghan, T. (1980). School Effectiveness: A Reassessment of the Evidence. New York: McGraw-Hill.

Manasse, L.A. (1984). Principals as leaders of high-performing systems. Educational Leadership, 41,(5), 42-46.

Miles, K.H., & Darling-Hammond, L. (1998). Rethinking the allocation of teaching resources: Some lessons from high-performing schools. Educational Evaluation and Policy Analysis, 20 (1), 9-29.

Minnesota Educational Effectiveness Program. (1989). Minnesota State Department of Education, St. Paul.

Murphy, J. & Hallinger, P. (1986). The superintendent as instructional leader: Findings from effective school districts. The Journal of Educational Administration, 24, (2) Summer.

Murphy, J. (1989). The paradox of decentralizing schools: Lessons taken from business, government and the Catholic Church. Phi Delta Kappan, 70, 808-812.

National Reading Panel (2000). Teaching children to read: And evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, DC: National Institute of Child Health and Human Development.

Newmann, F.A. (1991). National Center on Effective Secondary Schools: Final Report. Office of Educational Research and Improvement, Washington, D.C.

Odden, A. & Archibald, S. (2000). Reallocating resources: How to boost student achievement without asking for more. Thousand Oaks, CA: Corwin Press.

Olson, L. (2000). New thinking on what makes a leader. Education Week, 19, (19), 14-15.

Parsons, T. (1960). Structure and Process in Modern Societies. Glencoe, IL: Free Press. Phi Delta Kappa, (1980). Why do some urban schools succeed? Bloomington, IN: Author.

Purkey, S.C., & Smith, M.S. (1983). Effective schools: A review. Elementary School Journal, 83, (4), 427-452.

Raisch, C., & Rogus, J. (1995). Helping the troubled principal: The central office's formal role in boosting marginal performers. The School Administrator, 52, (5), 12-15.

Raymond, M., Fletcher, S., & Luque, J. (2001). Teach for America: And evaluation of teacher differences and student outcomes in Houston, Texas. CREDO, The Hoover Institution, Stanford University: www.rochester.edu/credo.

Rosenholtz, S.J. (1985). Effective schools: Interpreting the evidence. American Journal of Education, 93, 352-388.

Rotherham, A. (1999, February). When it comes to school size, smaller is better. Education Week: http://www.edweek.com/ew/ew_printstory.cfm?slug=24rother.h18.

Rutherford, W.L. (1985). School principals as effective leaders. Phi Delta Kappan, 67,(1), 31-34

Schaub, M., and Baker, D.B. (1991). Solving the math problem. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Schein, E.H. (1985). Organizational Culture and Leadership. San Francisco: Jossey-Bass Shoemaker, J., & Fraser, H. (1981). What principals can do: Some implications from studies of effective schooling. Phi Delta Kappan, 63, 178-182.

Sergiovanni, T.J. (1984). Leadership as Cultural Expression. In Leadership and Organizational Culture, edited by Thomas J. Sergiovanni and John E. Corbally, p. 105-114. Urbana, IL: University of Illinois Press.

Shoemaker, J. (1984). Research-based improvement practices. Hartford: Connecticut State Department of Education.

Sizemore, B.A. (1985). Pitfalls and promises of effective schools research. Journal of Negro Education, 54, (3), 269-88.

Sizemore, B.A., Brossard, C.A., & Harrigan, B. (1983). An abashing anomaly: The high achieving, predominantly black elementary school. Pittsburgh: University of Pittsburgh Abstract.

Stallings, J.A. (1981). What research has to say to administrators of secondary schools about effective teaching and staff development. Creating conditions for effective teaching. Eugene, OR: Center for Educational Policy and Management, University of Oregon.

Stedman, L.C. (1985). A new look at the effective schools literature. Urban Education, 20, 295-326.

Stedman, L.C. (1987). It's Time We Changed the Effective Schools Formula. Phi Delta Kappan, 69, 214-224.

Stemnock, S.K. (1974). Summary of research on size of schools and school districts. Educational Research Service, Inc. Arlington, VA.

Steers, R.M. (1975). Problems in the measurement of organizational effectiveness. Administrative Science Quarterly, 20, 546-558.

Steers, R.M. (1977). Organizational Effectiveness: A Behavioral View. Santa Monica, CA: Goodyear

Stigler, J.W., and Stevenson, H.W. (1991). How Asian teachers polish each lesson to perfection. American Educator, 15 (1): 12-20, 43-48.

Strayer, G.D. (1913). Is scientific accuracy possible in the measurement of the efficiency of instruction? Education, 34, (12), 253.

Stringfield, S. & Teddlie, C. (1987). A time to summarize: six years and three phases of the Louisana School Effectiveness study. Paper presented at the Annual Meeting of the American Educational Research Association. Washington, D.C. April 20-24

Task Force on Education for Economic Growth. (1983). Action for excellence. Denver: Education Commission of the States.

Taylor, B. (1984). Implementing what works: Elementary principals and school improvement programs. Ph.D. Dissertation, Northwestern University, Evanston, IL.

Taylor, F.W. (1911). The principles of scientific management. New York and London: Harper & brothers.

Teddlie, C. (1996). Emerging topics in school effectiveness. School Effectiveness and School Improvement. In press. .

Terry, P.M. (1996). The principal and instructional leadership. Paper presented at the Annual Meeting of the National Council of Professors in Educational Administration (Corpus Christi, TX).

Teske, P.E. & Schneider, M. (1999). The importance of leadership: The role of school principals. Arlington, VA: The Price-Waterhouse Coopers Endowment for the Business of Government.

Toland, M. (2002). Personal communication. Lincoln, NE: UNL NEAR Center.

Tomlinson, T.M. (1980). Student ability, student background and student achievement: Another look at life in effective schools. Paper presented at the Educational Testing Service Conferences on Effective Schools, New York, NY.

Venezky, R.L., & Winfield, L.F. (1979). Schools that succeed beyond expectations in teaching reading. Newark, DE: University of Delaware. (ERIC Document Reproduction Service No. ED 177484).

Weick, K.E. (1982). Administering education in loosely coupled schools. Phi Delta Kappan, 63, (10), 673-676.

Wenglinsky, H. (2000). How teaching matters: Bringing the classroom back into discussions of teacher quality. Princeton, NJ: Educational Testing Service.

Yuchtman, E. & Seashore, S. (1967). A system resource approach to organizational effectiveness. American Sociological Review, 32, 891-903.

Zammuto, R.F. (1982). Assessing Organizational Effectiveness. Albany: State University of New York Press.

Zerchykor, R. (1985). A citizen's notebook for effective schools. Boston, MA: The Institute for Responsive Education.

Zirkel, P.A., & Greenwood, S.C. (1987). Effective schools and effective principals: Effective research? Teachers College Record, 89, 255-267.

Appendix A
IRB Approval Notice

University of Nebraska Lincoln

Research Compliance Services
Institutional Review Board
[illegible] Whittier Bldg.
2055 N Street
P.O. Box 830849
Lincoln NE 68583-0849
(402) 472-6965
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April 30, 2001

Mr. Jeff West
P.O. Box 211
Chappell NE 69129

IRB#: 2001-04-264 EX

TITLE OF PROPOSAL: **School District Variables and Their Contributions to Student Achievement in Nebraska Class III Public School Districts**

Dear Mr. West:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. This project has been approved by the Unit Review Committee from your college and sent to the IRB. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study. Your proposal seems to be in compliance with this institution's Multiple Project Assurance M-1510 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

You are authorized to implement this study as of the Date of Final Approval: 4/30/01. This approval is Valid Until: 4/30/02.

1. Enclosed is the IRB approved Informed Consent form for this project. Please use this form when making copies to distribute to your participants. If it is necessary to create a new informed consent form, please send us your original so that we may approve and stamp it before it is distributed to participants.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board. Before the anniversary date of your project, you will be contacted about submitting a continuing review and provide a progress report of the research project or its closure.

Sincerely,

Sharon A. Bratton, Chair
for the IRB

cc: [illegible]
[illegible]
[illegible] Committee

Appendix B
Organizational Health Survey

Survey Number_____

Survey of School District Organizational Health

This survey is designed to measure your perceptions of different parts of your school district. It contains eighty items, but does not take long to complete. Some items will appear repetitious. In responding to these questions, please base your responses on your perception of the total district rather than your specific building. Please circle the number to the right of the item that best expresses your agreement with the statement.

1 = Complete disagreement with the statement
2 = Some disagreement with the statement
3 = Some agreement with the statement
4 = Complete agreement with the statement

1) Measurable student outcomes are strongly emphasized in this school district.	1 2 3 4
2) Our superintendent is competent in his/her job.	1 2 3 4
3) This school district employs the right number of administrators.	1 2 3 4
4) Meetings here are usually worthwhile in this school district.	1 2 3 4
5) Administrators disagree a lot in this district.	1 2 3 4
6) Opportunities for personal growth are plentiful in this district.	1 2 3 4
7) My job is important to this school district.	1 2 3 4
8) Many people generate new ideas in this school district.	1 2 3 4
9) The administrators in this school district have clear goals.	1 2 3 4
10) Our superintendent sets a good example for principals.	1 2 3 4
11) There is little duplication of job responsibilities in this district.	1 2 3 4
12) In this district, we have meetings only when they are needed.	1 2 3 4
13) Administrators deal with each other in a friendly manner.	1 2 3 4
14) This school district does a good job recruiting new employees.	1 2 3 4
15) Teachers feel they have an important part in this school district.	1 2 3 4

1 = Complete disagreement with the statement
2 = Some disagreement with the statement
3 = Some agreement with the statement
4 = Complete agreement with the statement

16) Creative thinking is encouraged in this school district.	1 2 3 4
17) This school district is always trying to improve student achievement.	1 2 3 4
18) Administrators in this district are skilled in motivating teachers.	1 2 3 4
19) This district has the right number of administrators.	1 2 3 4
20) School administrators ask teachers into their offices for informal talk.	1 2 3 4
21) Teachers may disagree with administrators with no fear of being penalized.	1 2 3 4
22) People are assigned according to their abilities in this school district.	1 2 3 4
23) Teachers are invited to make suggestions in this school district.	1 2 3 4
24) The teaching staff looks at alternative choices before deciding on what to do.	1 2 3 4
25) In this district teachers are properly endorsed for their teaching assignments.	1 2 3 4
26) School administrators in this district are effective in their work.	1 2 3 4
27) In this district classified staff support the work of teachers.	1 2 3 4
28) Individuals feel free to discuss issues at meetings.	1 2 3 4
29) Administrators encourage debate about the best way to do things.	1 2 3 4
30) Assignment of a teacher is based on the background and education of the teacher.	1 2 3 4
31) The teaching staff is active in working to achieve district goals.	1 2 3 4
32) The teaching staff is always open to new ideas.	1 2 3 4
33) Teachers are recognized for superior performance of their students.	1 2 3 4
34) In the district as a whole, teachers trust school administrators in this school district.	1 2 3 4
35) When changes are needed in this district, they are made.	1 2 3 4

1 = Complete disagreement with the statement
2 = Some disagreement with the statement
3 = Some agreement with the statement
4 = Complete agreement with the statement

36) I am able to speak freely with school administrators. 1 2 3 4

37) There is very little conflict between teachers in this district. 1 2 3 4

38) This district does a good job using in-service dollars for staff development. 1 2 3 4

39) Teachers have the chance to express their feelings about important decisions. 1 2 3 4

40) Administrators openly praise creative teachers in this district. 1 2 3 4

41) Administrators often publicly discuss student learning outcomes. 1 2 3 4

42) Teachers accept administrative decisions willingly in this district. 1 2 3 4

43) Administrators know their jobs in this district. 1 2 3 4

44) Teachers know what is going on in this district. 1 2 3 4

45) Conflict is accepted well in this district and is used constructively. 1 2 3 4

46) People in this district are assigned to the right responsibilities. 1 2 3 4

47) Teachers are often asked to serve on committees with their administrators. 1 2 3 4

48) Teachers are coming up with ideas that are used by the district. 1 2 3 4

49) Student outcomes are the most important consideration in this district. 1 2 3 4

50) Administrative decisions this past year have been helpful for the district. 1 2 3 4

51) Every person has the authority to make decisions about their assigned area. 1 2 3 4

52) I can see administrators whenever I need to do so. 1 2 3 4

53) Teachers participate actively in settling issues. 1 2 3 4

54) Administrators view teachers as the district's top resource. 1 2 3 4

55) My ideas for change have been welcomed in the district. 1 2 3 4

1 = Complete disagreement with the statement
2 = Some disagreement with the statement
3 = Some agreement with the statement
4 = Complete agreement with the statement

56) Administrators often ask teachers for ideas. 1 2 3 4

57) Student achievement is highly valued here. 1 2 3 4

58) Administrators are highly respected in this school district. 1 2 3 4

59) No one part of this school district has too much power. 1 2 3 4

60) I always have information ahead of any changes that are planned. 1 2 3 4

61) Disagreement usually leads to improvement here. 1 2 3 4

62) This school district is fair to individuals. 1 2 3 4

63) Administrators accept ideas for doing new things. 1 2 3 4

64) Teachers are willing to try something new. 1 2 3 4

65) Teachers try to do things better than they did the last time. 1 2 3 4

66) Teachers are given enough authority to do their jobs in this district. 1 2 3 4

67) Teachers understand how their school district operates. 1 2 3 4

68) Teachers communicate well with each other in this district. 1 2 3 4

69) Teachers work for the best solution, not to win the argument. 1 2 3 4

70) Teachers have opportunity for growth in this organization. 1 2 3 4

71) Decisions are postponed if teachers don't agree. 1 2 3 4

72) Teachers in this district are known for innovative teaching. 1 2 3 4

73) Very little time is wasted in this school district. 1 2 3 4

74) Teachers have a clear understanding of district rules and regulations. 1 2 3 4

75) Teachers know how this school district operates. 1 2 3 4

76) Teachers have sufficient opportunity to plan together. 1 2 3 4

1 = Complete disagreement with the statement
2 = Some disagreement with the statement
3 = Some agreement with the statement
4 = Complete agreement with the statement

77) Teachers do not suffer when they disagree with administrators. 1 2 3 4

78) Teacher absenteeism is not a problem in this district. 1 2 3 4

79) Administrators are interested in teacher ideas. 1 2 3 4

80) Teachers are creative in this school district. 1 2 3 4

Biographical Data

1. Years experience_____

For each of the following questions, please circle the most appropriate response.

2. Primary grade level assignment:

a. Elementary b. Middle Level/Junior High c. Secondary

3. In responding to this instrument I based my perception on:

a. The district as a whole.

b. The building that I work in.

4. When answering questions regarding administrators I based my perception on:

a. All of the administrators in the district

b. My building administrator.

Thank you for taking the time to complete this survey.

Questions about this instrument and study may be directed to Kent McLellan or Jeff West or Miles Bryant at the following addresses:

Kent McLellan, Morrill Public Schools, 308-247-2149
Jeff West, Chappell Public Schools, 308-874-2911
Miles Bryant, University of Nebraska-Lincoln, 402-472-0960

Appendix C
Recruitment Letter for Pilot Study

University of Nebraska Lincoln

Department of Educational Administration
313 Nebraska Hall
P.O. Box 880288
Lincoln, NE 68588-0288
(402) 472-3726
FAX (402) 472-4300

March 23, 2001

Name
Pilot School Name
Pilot School Address
City, State, Zip

Dear Name:

We are doctoral students at the University of Nebraska-Lincoln and we are conducting a research study to see if we can identify school district characteristics that are linked with better student achievement as measured by the new State Report Card. We need you help. You have been randomly chosen from the teachers in your school. We hope you will complete the enclosed questionnaire and return it to us.

The enclosed questionnaire contains items that address the following eight aspect of school district organization: 1) attention to student outcomes, 2) leadership, 3) organizational structure, 4) communication, 5) conflict management, 6) human resource management, 7) staff participation, 8) creativity. Please help up by completing the enclosed questionnaire: it will only take about ten minutes of your time. A self-addressed stamped envelope has been enclosed for you to return the survey. We hop that with your help we will be able to learn more about how to help students achieve.

Your responses to this study are voluntary. Your consent to participate in this study is indicated by you completing the questionnaire. Your responses will be confidential and will be kept in a secure file. Neither you nor your district will be identified by name. Our study has been reviewed by the Institutional Review Board of the University of Nebraska and has been assigned this number: 2001-04-065 EX.

Thank you for your assistance and time.

Sincerely,

Kenton J. McLellan
Primary Investigator, Phone (308) 247-2140

Jeffery D. West
Primary Investigator, Phone (308) 874-2911

Appendix D
Letter to Superintendent

University of
Nebraska
Lincoln

Department of Educational Administration
[illegible]
PO Box [illegible]
Lincoln, NE [illegible]
[illegible]
FAX [illegible]

April 1, 2001

Mr. NAME, Superintendent
Randomly Selected High School
Box 9999999
Anytown, NE 88888

Dear Mr. NAME

As you know, the Nebraska Department of Education (NDE) published the first State of Nebraska Report Card in 2000. This late offers us the opportunity to examine school district characteristics that are related to student outcomes. As students in the University of Nebraska-Lincoln Educational Administration Doctoral program, we are conducting a research study of the NDE State Report Card data that we hope will not only broaden the basic understanding of organizational structure and effectiveness, but also will shed light on the question of whether school districts can make changes that will affect student achievement.

We have selected your district at random from the population of 284 Class III K-12 districts in the state. In gathering data in addition to what the state has published in its Report Card, we want to administer a questionnaire to a small number of teachers in each district that we have selected. Our intention is to identify a small sample of teachers in your district and send them a questionnaire that we have developed. The questionnaire contains items that address eight aspects of school district organization: attention to student outcomes, leadership, organizational structure, communication, conflict management, human resource management, staff participation, and creativity. The questionnaire will take only a few minutes of your staff's time and their participation is voluntary.

By returning the completed questionnaire, it will indicate their consent to use the information provided. All responses will be kept strictly confidential and will appear only in summarized form. Your school district and teacher names will not be used in the final report.

We would like your consent to this study for our study. If you are comfortable with what we propose, we will ascertain teacher consent and begin to identify teachers so that we may mail them a questionnaire. If you would like to speak with us about this project, please contact us by April 15, 2001, at the phone numbers below or by email at [illegible]@unlserve.unl.edu or [illegible]@unl.edu.

Student academic achievement is a very timely topic in view of the frequently heard cry for accountability in public schools. We are hoping our doctoral study will identify district characteristics that have a relationship to student achievement. Teachers will be encouraged to contact us as well. The University of Nebraska-Lincoln Institutional Review Board has approved [illegible].

Thank you for your assistance and time.

Sincerely,

[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]

Appendix E
Letter Inviting Teachers to Participate

University of Nebraska Lincoln

Department of Educational Administration
513 Nebraska Hall
P.O. Box 880588
Lincoln, NE 68588-0588
(402) 472-3726
FAX (402) 472-4300

April 26, 2001

Dear Teacher: IRB#2001-04-264EX

We are doctoral students at the University of Nebraska-Lincoln and we are conducting a research study to see if we can identify school district characteristics that are linked with better student achievements as measured by the new State Report Card. We need your help. You have been randomly chosen from the teachers in your school. We hope you will complete the enclosed questionnaire and return it to us.

The enclosed questionnaire contains items that address the following eight aspects of school district organization: 1) attention to student outcomes, 2) leadership, 3) organizational structure, 4) communication, 5) conflict management, 6) human resource management, 7) staff participation, and 8) creativity. Please help us by completing the enclosed questionnaire: it will take ten minutes or less to complete the survey. A self-addressed stamped envelope has been enclosed for you to return the survey. We hope that with your help we will be able to learn more about how to help students achieve.

Your responses to this study are voluntary. Your consent to participate in this study is indicated by your completing the questionnaire. Your responses will be kept confidential, kept in a secure file, and destroyed by June 1, 2002. Neither you nor your district will be identified by name. Our study has been reviewed by the Institutional Review Board of the University of Nebraska and has been assigned the above number.

If you have any questions about the research, please contact any one of the numbers listed below. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators, the University of Nebraska or any other participating agent. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions about your rights as a research participant, you may call the University of Nebraska Institutional Review Board at (402) 472-6965

Thank you for your assistance and time.

Sincerely,

Kenton J. McLellan
Primary Investigator (308) 247-2140

Jeffrey D. West
Primary Investigator (308) 874-2911

James Bryant
Secondary Investigator (402) 472-3725

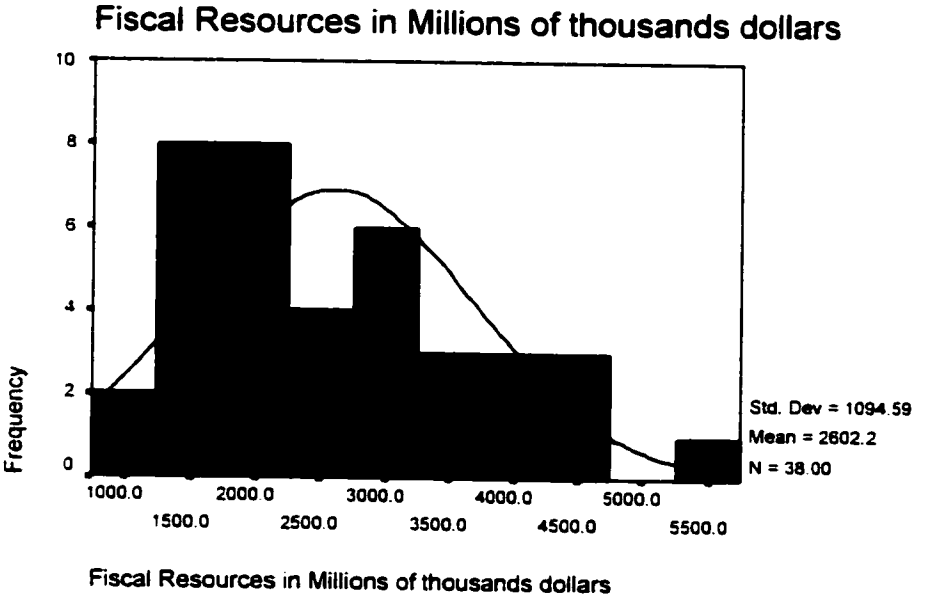
Appendix F
School Districts Used in the Study

Alma Public Schools
Anselmo-Merna Public Schools
Ashland Greenwood Schools
Axtell Community Schools
Bayard Public Schools
Bloomfield Community Schools
Centennial Public Schools
Central City Public Schools
Chappell Public Schools
Coleridge Community Schools
Conestoga Public Schools
Dodge Public Schools
Elkhorn Valley Schools
Exeter Public Schools
Hartington Public Schools
Humphrey Public Schools
Louisville Public Schools
Lyons-Decatur Northeast Schools
Mitchell Public Schools
Morrill Public Schools
Newcastle Public Schools
Niobrara Public Schools
North Loup Scotia Public Schools
Palmer Public Schools
Ponca Public Schools
Ravenna Public Schools
Red Cloud Community Schools
Sargent Public Schools
Scribner-Sydner Community Schools
Shickley Public Schools
Spencer-Naper Public Schools
St. Paul Public Schools
Stuart Public Schools
Sutherland Public Schools
Wilber-Clatonia Public Schools
Wilcox Public Schools
Winnebago Public Schools
Wisner-Pilger Public Schools

Appendix G
Data Frequencies and Histograms

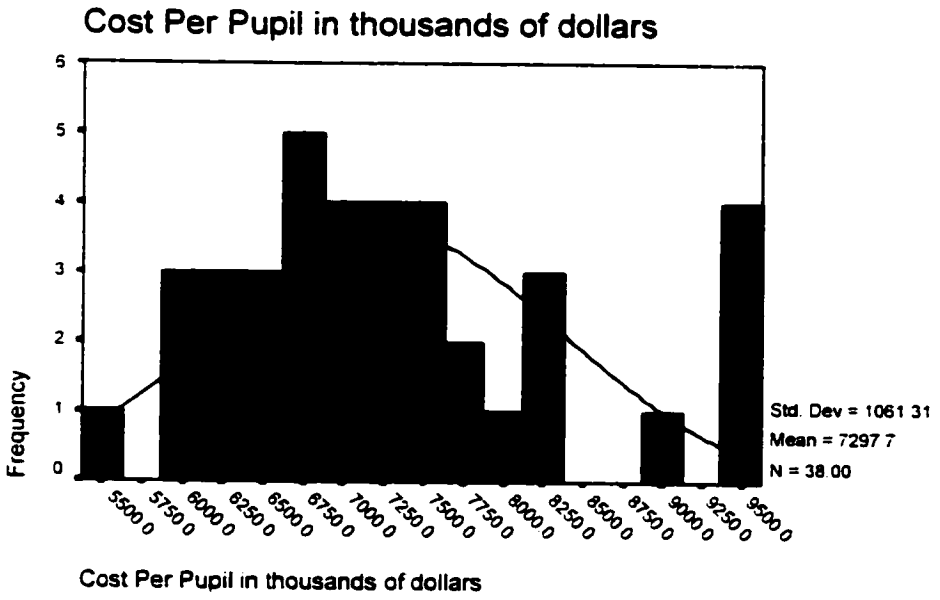
Fiscal Resources in Millions of thousands dollars

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1249.00	2	5.3	5.3	5.3
	1322.00	1	2.6	2.6	7.9
	1384.00	1	2.6	2.6	10.5
	1400.00	1	2.6	2.6	13.2
	1462.00	1	2.6	2.6	15.8
	1504.00	1	2.6	2.6	18.4
	1633.00	1	2.6	2.6	21.1
	1645.00	1	2.6	2.6	23.7
	1679.00	1	2.6	2.6	26.3
	1751.00	1	2.6	2.6	28.9
	1860.00	1	2.6	2.6	31.6
	1864.00	1	2.6	2.6	34.2
	1902.00	1	2.6	2.6	36.8
	1929.00	1	2.6	2.6	39.5
	2040.00	1	2.6	2.6	42.1
	2221.00	1	2.6	2.6	44.7
	2244.00	1	2.6	2.6	47.4
	2309.00	1	2.6	2.6	50.0
	2416.00	1	2.6	2.6	52.6
	2511.00	1	2.6	2.6	55.3
	2702.00	1	2.6	2.6	57.9
	2756.00	1	2.6	2.6	60.5
	2856.00	1	2.6	2.6	63.2
	2859.00	1	2.6	2.6	65.8
	2886.00	1	2.6	2.6	68.4
	2979.00	1	2.6	2.6	71.1
	3120.00	1	2.6	2.6	73.7
	3338.00	1	2.6	2.6	76.3
	3438.00	1	2.6	2.6	78.9
	3503.00	1	2.6	2.6	81.6
	3861.00	1	2.6	2.6	84.2
	4011.00	1	2.6	2.6	86.8
	4099.00	1	2.6	2.6	89.5
	4358.00	1	2.6	2.6	92.1
	4425.00	1	2.6	2.6	94.7
	4612.00	1	2.6	2.6	97.4
	5508.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Fiscal Resources in Millions of thousands dollars
Frequency
10
8
6
4
2
0
1000.0
1500.0
2000.0
2500.0
3000.0
3500.0
4000.0
4500.0
5000.0
5500.0
Std. Dev = 1094.59
Mean = 2602.2
N = 38.00
Fiscal Resources in Millions of thousands dollars

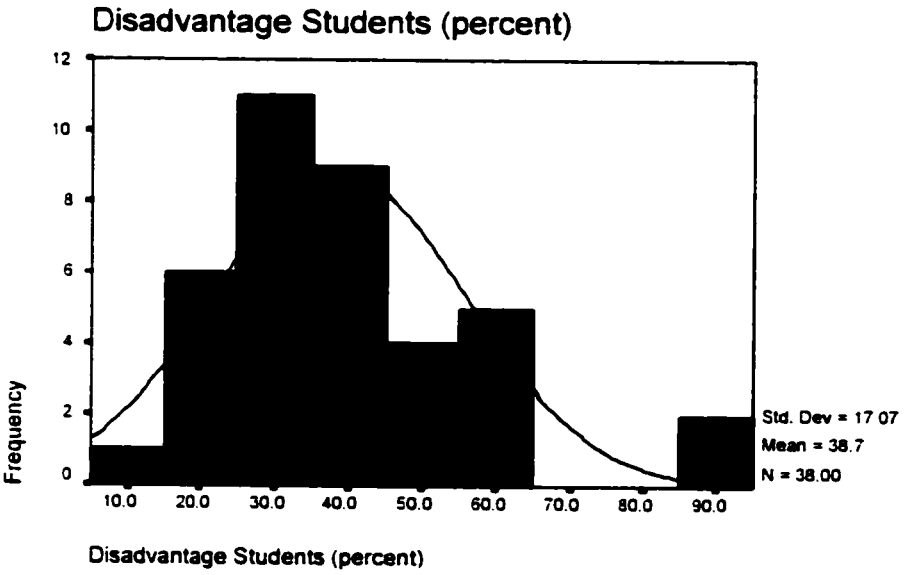
Cost Per Pupil in thousands of dollars

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5422.00	1	2.6	2.6	2.6
	5962.00	1	2.6	2.6	5.3
	6009.00	1	2.6	2.6	7.9
	6057.00	1	2.6	2.6	10.5
	6169.00	1	2.6	2.6	13.2
	6284.00	1	2.6	2.6	15.8
	6352.00	1	2.6	2.6	18.4
	6392.00	1	2.6	2.6	21.1
	6568.00	1	2.6	2.6	23.7
	6616.00	1	2.6	2.6	26.3
	6664.00	1	2.6	2.6	28.9
	6689.00	1	2.6	2.6	31.6
	6702.00	1	2.6	2.6	34.2
	6741.00	1	2.6	2.6	36.8
	6789.00	1	2.6	2.6	39.5
	6924.00	1	2.6	2.6	42.1
	6954.00	1	2.6	2.6	44.7
	7064.00	1	2.6	2.6	47.4
	7085.00	1	2.6	2.6	50.0
	7146.00	1	2.6	2.6	52.6
	7162.00	1	2.6	2.6	55.3
	7210.00	1	2.6	2.6	57.9
	7252.00	1	2.6	2.6	60.5
	7412.00	1	2.6	2.6	63.2
	7458.00	1	2.6	2.6	65.8
	7462.00	1	2.6	2.6	68.4
	7488.00	1	2.6	2.6	71.1
	7820.00	1	2.6	2.6	73.7
	7840.00	1	2.6	2.6	76.3
	8023.00	1	2.6	2.6	78.9
	8142.00	1	2.6	2.6	81.6
	8149.00	1	2.6	2.6	84.2
	8294.00	1	2.6	2.6	86.8
	8941.00	1	2.6	2.6	89.5
	9408.00	1	2.6	2.6	92.1
	9520.00	1	2.6	2.6	94.7
	9538.00	1	2.6	2.6	97.4
	9604.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Cost Per Pupil in thousands of dollars
Frequency
0
1
2
3
4
5
6
Std. Dev = 1061.31
Mean = 7297.7
N = 38.00
5500.0
5750.0
6000.0
6250.0
6500.0
6750.0
7000.0
7250.0
7500.0
7750.0
8000.0
8250.0
8500.0
8750.0
9000.0
9250.0
9500.0
Cost Per Pupil in thousands of dollars

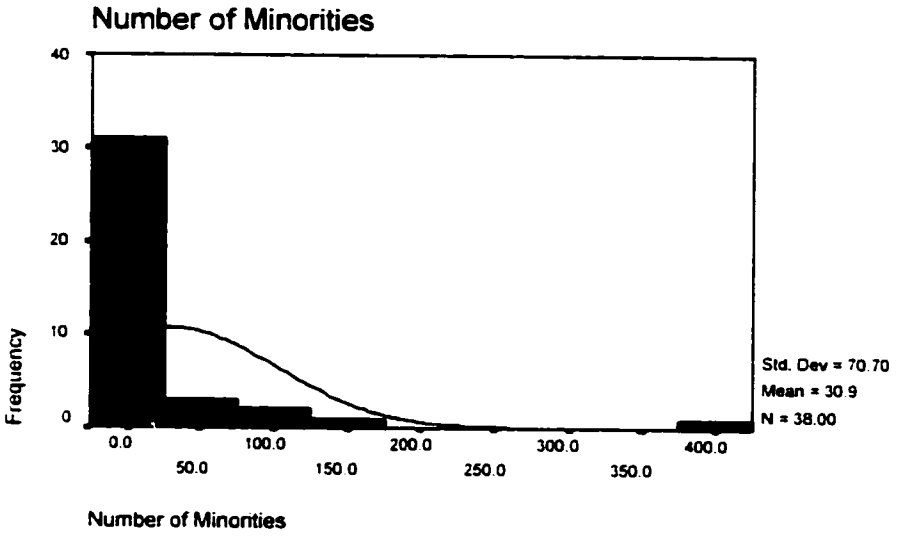
Disadvantage Students (percent)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.00	1	2.6	2.6	2.6
	16.00	1	2.6	2.6	5.3
	18.00	1	2.6	2.6	7.9
	20.00	1	2.6	2.6	10.5
	22.00	1	2.6	2.6	13.2
	23.00	1	2.6	2.6	15.8
	24.00	1	2.6	2.6	18.4
	25.00	1	2.6	2.6	21.1
	27.00	2	5.3	5.3	26.3
	28.00	1	2.6	2.6	28.9
	29.00	2	5.3	5.3	34.2
	30.00	1	2.6	2.6	36.8
	33.00	2	5.3	5.3	42.1
	34.00	2	5.3	5.3	47.4
	35.00	2	5.3	5.3	52.6
	36.00	1	2.6	2.6	55.3
	39.00	3	7.9	7.9	63.2
	41.00	1	2.6	2.6	65.8
	42.00	1	2.6	2.6	68.4
	43.00	1	2.6	2.6	71.1
	45.00	1	2.6	2.6	73.7
	46.00	1	2.6	2.6	76.3
	50.00	1	2.6	2.6	78.9
	54.00	1	2.6	2.6	81.6
	56.00	2	5.3	5.3	86.8
	57.00	1	2.6	2.6	89.5
	61.00	1	2.6	2.6	92.1
	64.00	1	2.6	2.6	94.7
	85.00	1	2.6	2.6	97.4
	86.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Disadvantage Students (percent)
Frequency
12
10
8
6
4
2
0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Std. Dev = 17.07
Mean = 38.7
N = 38.00
Disadvantage Students (percent)

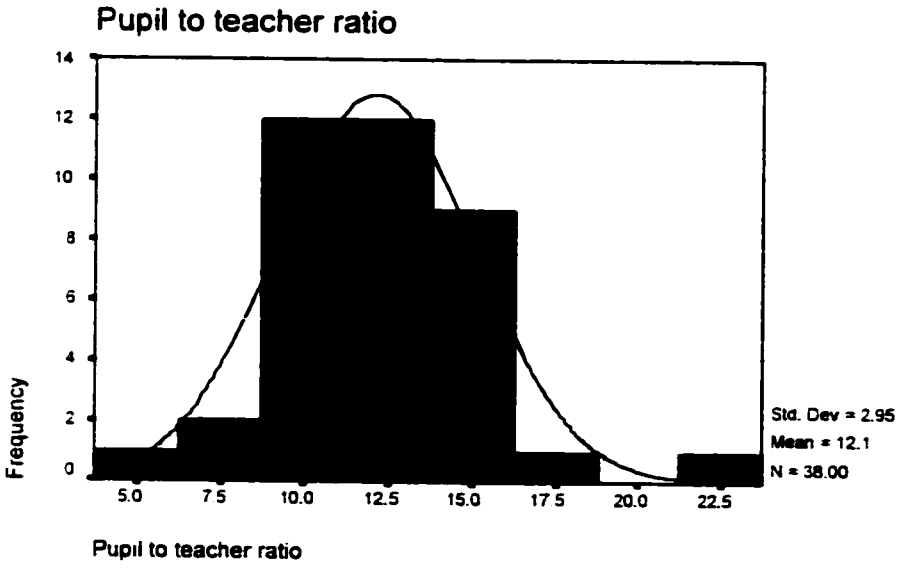
Number of Minorities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	5.3	5.3	5.3
	1.00	2	5.3	5.3	10.5
	2.00	3	7.9	7.9	18.4
	4.00	2	5.3	5.3	23.7
	5.00	4	10.5	10.5	34.2
	6.00	2	5.3	5.3	39.5
	7.00	2	5.3	5.3	44.7
	8.00	1	2.6	2.6	47.4
	10.00	2	5.3	5.3	52.6
	12.00	1	2.6	2.6	55.3
	13.00	1	2.6	2.6	57.9
	14.00	1	2.6	2.6	60.5
	15.00	1	2.6	2.6	63.2
	16.00	1	2.6	2.6	65.8
	18.00	1	2.6	2.6	68.4
	19.00	1	2.6	2.6	71.1
	21.00	3	7.9	7.9	78.9
	24.00	1	2.6	2.6	81.6
	35.00	1	2.6	2.6	84.2
	45.00	1	2.6	2.6	86.8
	60.00	1	2.6	2.6	89.5
	85.00	1	2.6	2.6	92.1
	115.00	1	2.6	2.6	94.7
	139.00	1	2.6	2.6	97.4
	413.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Number of Minorities
40
30
20
10
0
Frequency
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0
Std. Dev = 70.70
Mean = 30.9
N = 38.00
Number of Minorities

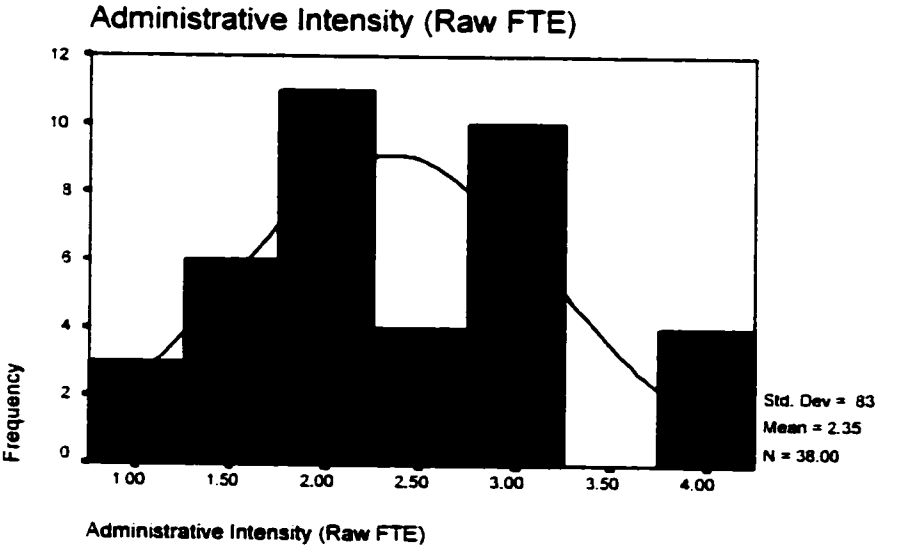
Pupil to teacher ratio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.00	1	2.6	2.6	2.6
	8.00	2	5.3	5.3	7.9
	9.00	3	7.9	7.9	15.8
	10.00	4	10.5	10.5	26.3
	11.00	5	13.2	13.2	39.5
	12.00	6	15.8	15.8	55.3
	13.00	6	15.8	15.8	71.1
	14.00	8	21.1	21.1	92.1
	15.00	1	2.6	2.6	94.7
	17.00	1	2.6	2.6	97.4
	23.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	



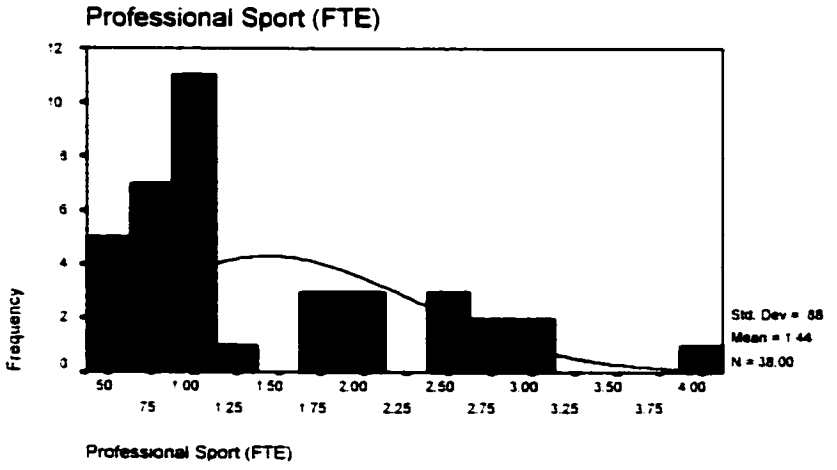
Administrative Intensity (Raw FTE)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	5.3	5.3	5.3
	1.13	1	2.6	2.6	7.9
	1.33	1	2.6	2.6	10.5
	1.37	1	2.6	2.6	13.2
	1.50	4	10.5	10.5	23.7
	1.75	1	2.6	2.6	26.3
	2.00	10	26.3	26.3	52.6
	2.29	1	2.6	2.6	55.3
	2.50	2	5.3	5.3	60.5
	2.70	1	2.6	2.6	63.2
	3.00	10	26.3	26.3	89.5
	3.75	1	2.6	2.6	92.1
	3.80	1	2.6	2.6	94.7
	4.00	2	5.3	5.3	100.0
	Total	38	100.0	100.0	



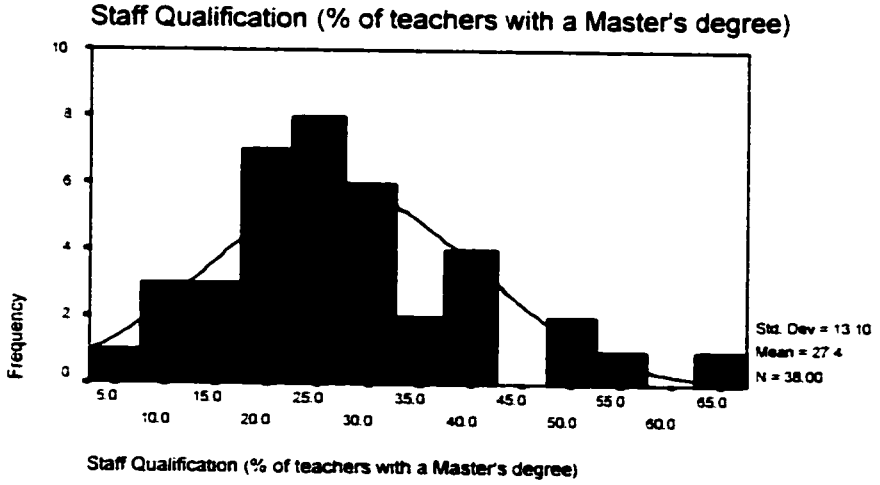
Professional Sport (FTE)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.50	3	7.9	7.9	7.9
	.60	1	2.6	2.6	10.5
	.62	1	2.6	2.6	13.2
	.67	1	2.6	2.6	15.8
	.75	2	5.3	5.3	21.1
	.80	2	5.3	5.3	26.3
	.86	1	2.6	2.6	28.9
	.87	1	2.6	2.6	31.6
	.94	1	2.6	2.6	34.2
	.95	1	2.6	2.6	36.8
	1.00	7	18.4	18.4	55.3
	1.10	2	5.3	5.3	60.5
	1.27	1	2.6	2.6	63.2
	1.68	1	2.6	2.6	65.8
	1.70	1	2.6	2.6	68.4
	1.75	1	2.6	2.6	71.1
	1.90	1	2.6	2.6	73.7
	2.00	2	5.3	5.3	78.9
	2.40	1	2.6	2.6	81.6
	2.50	1	2.6	2.6	84.2
	2.60	1	2.6	2.6	86.8
	2.82	1	2.6	2.6	89.5
	2.87	1	2.6	2.6	92.1
	2.88	1	2.6	2.6	94.7
	3.00	1	2.6	2.6	97.4
	4.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	



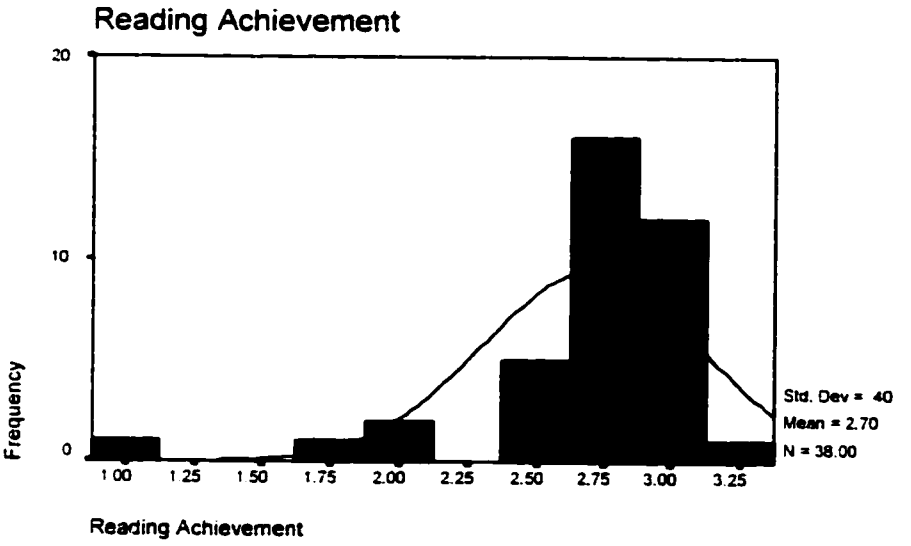
Staff Qualification (% of teachers with a Master's degree)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	1	2.6	2.6	2.6
	8.00	1	2.6	2.6	5.3
	12.00	2	5.3	5.3	10.5
	13.00	1	2.6	2.6	13.2
	14.00	2	5.3	5.3	18.4
	18.00	1	2.6	2.6	21.1
	19.00	1	2.6	2.6	23.7
	20.00	1	2.6	2.6	26.3
	21.00	1	2.6	2.6	28.9
	22.00	3	7.9	7.9	36.8
	23.00	5	13.2	13.2	50.0
	24.00	1	2.6	2.6	52.6
	27.00	2	5.3	5.3	57.9
	29.00	3	7.9	7.9	65.8
	30.00	2	5.3	5.3	71.1
	31.00	1	2.6	2.6	73.7
	33.00	1	2.6	2.6	76.3
	36.00	1	2.6	2.6	78.9
	38.00	1	2.6	2.6	81.6
	40.00	1	2.6	2.6	84.2
	41.00	2	5.3	5.3	89.5
	51.00	1	2.6	2.6	92.1
	52.00	1	2.6	2.6	94.7
	53.00	1	2.6	2.6	97.4
	64.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	



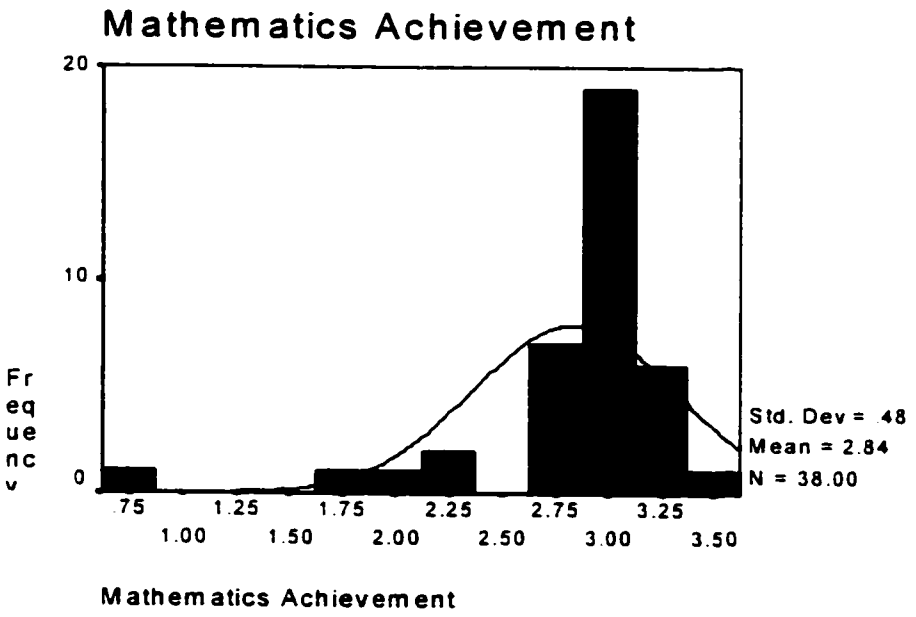
Reading Achievement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.06	1	2.6	2.6	2.6
	1.86	1	2.6	2.6	5.3
	1.96	1	2.6	2.6	7.9
	2.03	1	2.6	2.6	10.5
	2.40	1	2.6	2.6	13.2
	2.42	1	2.6	2.6	15.8
	2.53	1	2.6	2.6	18.4
	2.58	1	2.6	2.6	21.1
	2.62	1	2.6	2.6	23.7
	2.65	1	2.6	2.6	26.3
	2.66	1	2.6	2.6	28.9
	2.68	1	2.6	2.6	31.6
	2.70	1	2.6	2.6	34.2
	2.75	2	5.3	5.3	39.5
	2.76	3	7.9	7.9	47.4
	2.80	2	5.3	5.3	52.6
	2.82	2	5.3	5.3	57.9
	2.83	1	2.6	2.6	60.5
	2.84	1	2.6	2.6	63.2
	2.87	1	2.6	2.6	65.8
	2.88	1	2.6	2.6	68.4
	2.89	1	2.6	2.6	71.1
	2.92	3	7.9	7.9	78.9
	2.98	1	2.6	2.6	81.6
	2.99	2	5.3	5.3	86.8
	3.03	1	2.6	2.6	89.5
	3.04	2	5.3	5.3	94.7
	3.06	1	2.6	2.6	97.4
	3.23	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Reading Achievement
20
10
0
Frequency
1.00
1.25
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
Reading Achievement
Std. Dev = .40
Mean = 2.70
N = 38.00

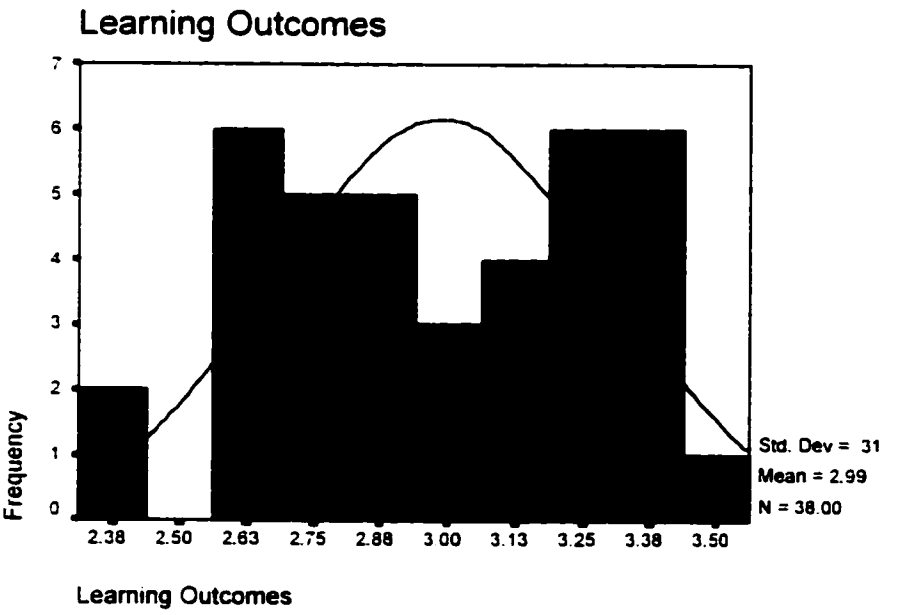
Mathematics Achievement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.84	1	2.6	2.6	2.6
	1.73	1	2.6	2.6	5.3
	1.98	1	2.6	2.6	7.9
	2.14	1	2.6	2.6	10.5
	2.30	1	2.6	2.6	13.2
	2.64	1	2.6	2.6	15.8
	2.72	1	2.6	2.6	18.4
	2.73	1	2.6	2.6	21.1
	2.75	1	2.6	2.6	23.7
	2.77	1	2.6	2.6	26.3
	2.82	1	2.6	2.6	28.9
	2.85	1	2.6	2.6	31.6
	2.88	1	2.6	2.6	34.2
	2.91	1	2.6	2.6	36.8
	2.92	1	2.6	2.6	39.5
	2.95	2	5.3	5.3	44.7
	2.96	1	2.6	2.6	47.4
	2.97	1	2.6	2.6	50.0
	2.98	2	5.3	5.3	55.3
	3.00	3	7.9	7.9	63.2
	3.03	2	5.3	5.3	68.4
	3.05	1	2.6	2.6	71.1
	3.06	1	2.6	2.6	73.7
	3.07	1	2.6	2.6	76.3
	3.10	1	2.6	2.6	78.9
	3.11	1	2.6	2.6	81.6
	3.13	1	2.6	2.6	84.2
	3.17	2	5.3	5.3	89.5
	3.19	1	2.6	2.6	92.1
	3.26	2	5.3	5.3	97.4
	3.38	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Mathematics Achievement
20
10
0
Frequency
Std. Dev = .48
Mean = 2.84
N = 38.00
.75
1.00
1.25
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
Mathematics Achievement

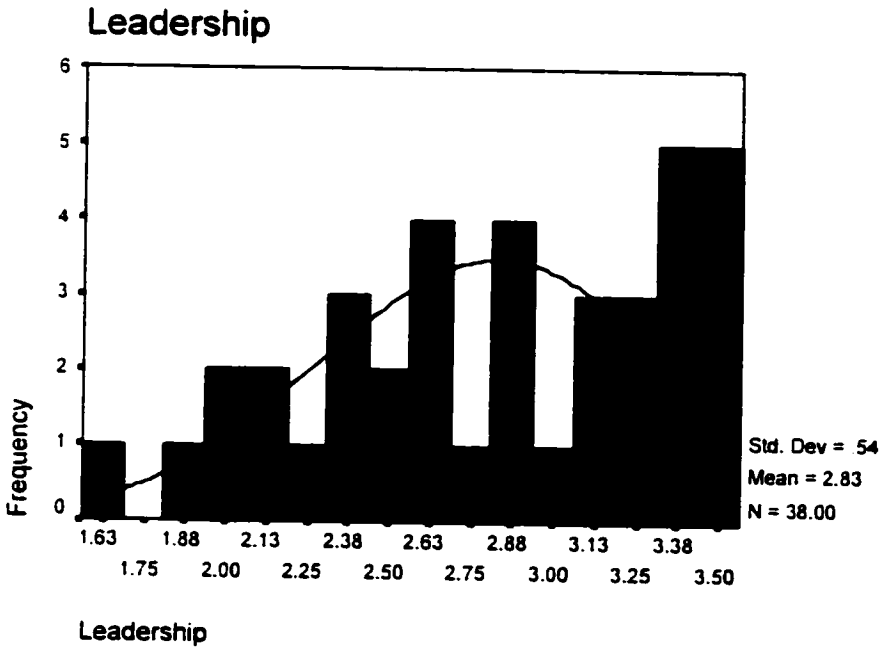
Learning Outcomes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.43	2	5.3	5.3	5.3
	2.57	1	2.6	2.6	7.9
	2.58	1	2.6	2.6	10.5
	2.60	1	2.6	2.6	13.2
	2.63	1	2.6	2.6	15.8
	2.67	2	5.3	5.3	21.1
	2.74	1	2.6	2.6	23.7
	2.75	1	2.6	2.6	26.3
	2.77	1	2.6	2.6	28.9
	2.80	2	5.3	5.3	34.2
	2.83	3	7.9	7.9	42.1
	2.87	1	2.6	2.6	44.7
	2.93	1	2.6	2.6	47.4
	2.95	1	2.6	2.6	50.0
	2.97	1	2.6	2.6	52.6
	3.06	1	2.6	2.6	55.3
	3.07	1	2.6	2.6	57.9
	3.08	1	2.6	2.6	60.5
	3.13	1	2.6	2.6	63.2
	3.15	1	2.6	2.6	65.8
	3.20	2	5.3	5.3	71.1
	3.23	1	2.6	2.6	73.7
	3.27	1	2.6	2.6	76.3
	3.30	2	5.3	5.3	81.6
	3.36	1	2.6	2.6	84.2
	3.38	2	5.3	5.3	89.5
	3.40	2	5.3	5.3	94.7
	3.43	1	2.6	2.6	97.4
	3.48	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Learning Outcomes
Frequency
7
6
5
4
3
2
1
0
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
3.50
Learning Outcomes
Std. Dev = .31
Mean = 2.99
N = 38.00

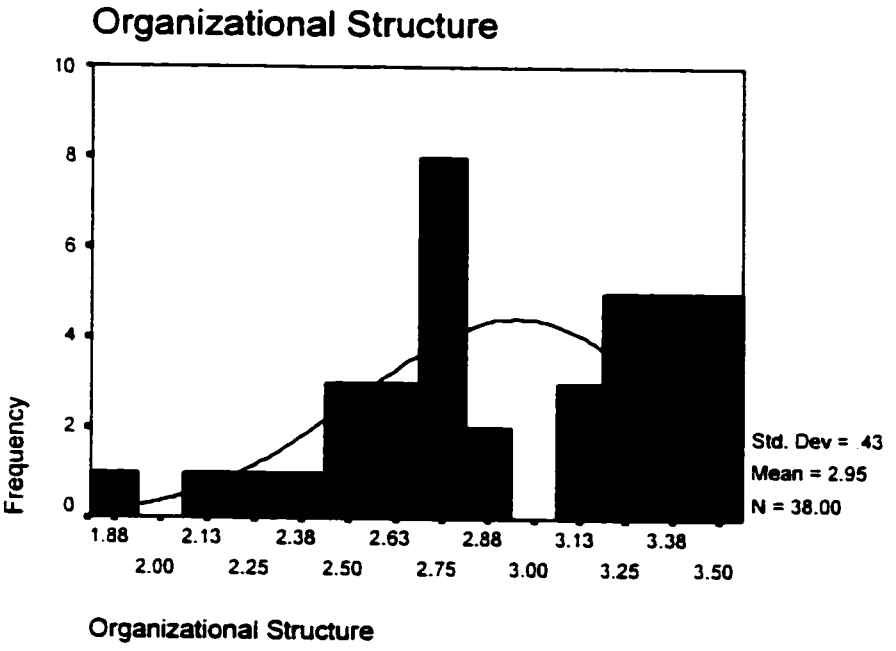
Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.67	1	2.6	2.6	2.6
	1.83	1	2.6	2.6	5.3
	1.95	1	2.6	2.6	7.9
	1.97	1	2.6	2.6	10.5
	2.13	1	2.6	2.6	13.2
	2.18	1	2.6	2.6	15.8
	2.20	1	2.6	2.6	18.4
	2.33	2	5.3	5.3	23.7
	2.37	1	2.6	2.6	26.3
	2.47	1	2.6	2.6	28.9
	2.50	1	2.6	2.6	31.6
	2.65	2	5.3	5.3	36.8
	2.68	2	5.3	5.3	42.1
	2.70	1	2.6	2.6	44.7
	2.83	1	2.6	2.6	47.4
	2.87	1	2.6	2.6	50.0
	2.88	1	2.6	2.6	52.6
	2.93	1	2.6	2.6	55.3
	3.00	1	2.6	2.6	57.9
	3.07	1	2.6	2.6	60.5
	3.10	1	2.6	2.6	63.2
	3.18	1	2.6	2.6	65.8
	3.23	2	5.3	5.3	71.1
	3.30	1	2.6	2.6	73.7
	3.33	1	2.6	2.6	76.3
	3.42	3	7.9	7.9	84.2
	3.43	1	2.6	2.6	86.8
	3.45	1	2.6	2.6	89.5
	3.48	1	2.6	2.6	92.1
	3.50	1	2.6	2.6	94.7
	3.52	1	2.6	2.6	97.4
	3.53	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Leadership
Frequency
0
1
2
3
4
5
6
1.63
1.75
1.88
2.00
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
3.50
Leadership
Std. Dev = .54
Mean = 2.83
N = 38.00

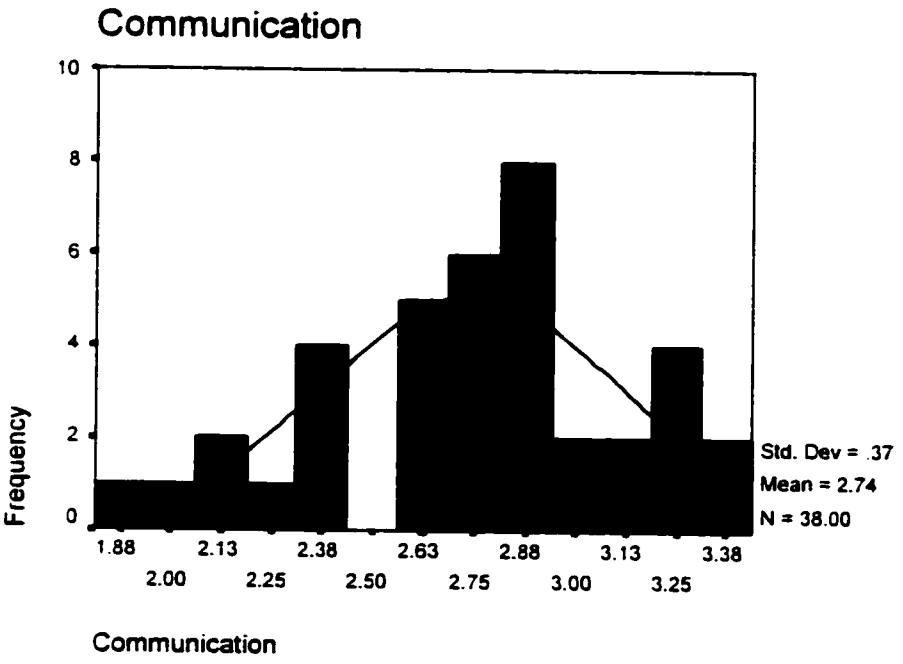
Organizational Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.83	1	2.6	2.6	2.6
	2.17	1	2.6	2.6	5.3
	2.27	1	2.6	2.6	7.9
	2.43	1	2.6	2.6	10.5
	2.50	1	2.6	2.6	13.2
	2.53	2	5.3	5.3	18.4
	2.60	1	2.6	2.6	21.1
	2.63	1	2.6	2.6	23.7
	2.67	1	2.6	2.6	26.3
	2.73	2	5.3	5.3	31.6
	2.77	1	2.6	2.6	34.2
	2.78	4	10.5	10.5	44.7
	2.80	1	2.6	2.6	47.4
	2.88	1	2.6	2.6	50.0
	2.93	1	2.6	2.6	52.6
	3.08	1	2.6	2.6	55.3
	3.10	2	5.3	5.3	60.5
	3.20	1	2.6	2.6	63.2
	3.23	1	2.6	2.6	65.8
	3.27	1	2.6	2.6	68.4
	3.30	2	5.3	5.3	73.7
	3.33	2	5.3	5.3	78.9
	3.42	2	5.3	5.3	84.2
	3.43	1	2.6	2.6	86.8
	3.45	1	2.6	2.6	89.5
	3.46	1	2.6	2.6	92.1
	3.50	1	2.6	2.6	94.7
	3.53	1	2.6	2.6	97.4
	3.54	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Organizational Structure
Frequency
10
8
6
4
2
0
1.88
2.00
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
3.50
Std. Dev = .43
Mean = 2.95
N = 38.00
Organizational Structure

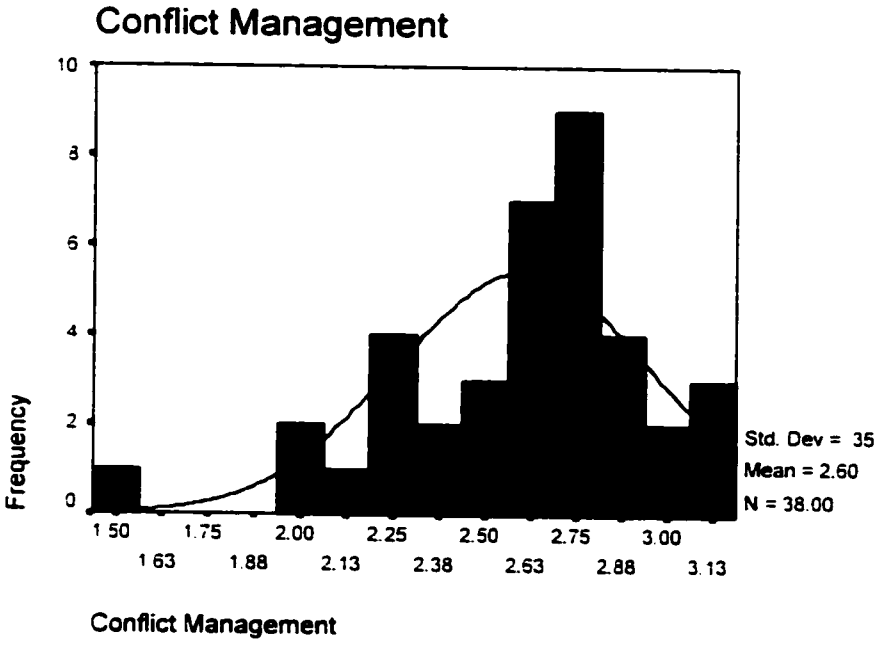
Communication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.87	1	2.6	2.6	2.6
	2.05	1	2.6	2.6	5.3
	2.10	1	2.6	2.6	7.9
	2.17	1	2.6	2.6	10.5
	2.23	1	2.6	2.6	13.2
	2.33	1	2.6	2.6	15.8
	2.38	1	2.6	2.6	18.4
	2.40	1	2.6	2.6	21.1
	2.43	1	2.6	2.6	23.7
	2.60	2	5.3	5.3	28.9
	2.63	2	5.3	5.3	34.2
	2.65	1	2.6	2.6	36.8
	2.70	4	10.5	10.5	47.4
	2.73	1	2.6	2.6	50.0
	2.77	1	2.6	2.6	52.6
	2.83	1	2.6	2.6	55.3
	2.85	1	2.6	2.6	57.9
	2.87	1	2.6	2.6	60.5
	2.90	2	5.3	5.3	65.8
	2.92	1	2.6	2.6	68.4
	2.93	2	5.3	5.3	73.7
	2.97	1	2.6	2.6	76.3
	3.00	1	2.6	2.6	78.9
	3.07	1	2.6	2.6	81.6
	3.18	1	2.6	2.6	84.2
	3.20	1	2.6	2.6	86.8
	3.22	1	2.6	2.6	89.5
	3.23	1	2.6	2.6	92.1
	3.26	1	2.6	2.6	94.7
	3.33	2	5.3	5.3	100.0
	Total	38	100.0	100.0	


Communication
10
8
6
4
2
0
Frequency
Std. Dev = .37
Mean = 2.74
N = 38.00
1.88
2.00
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
Communication

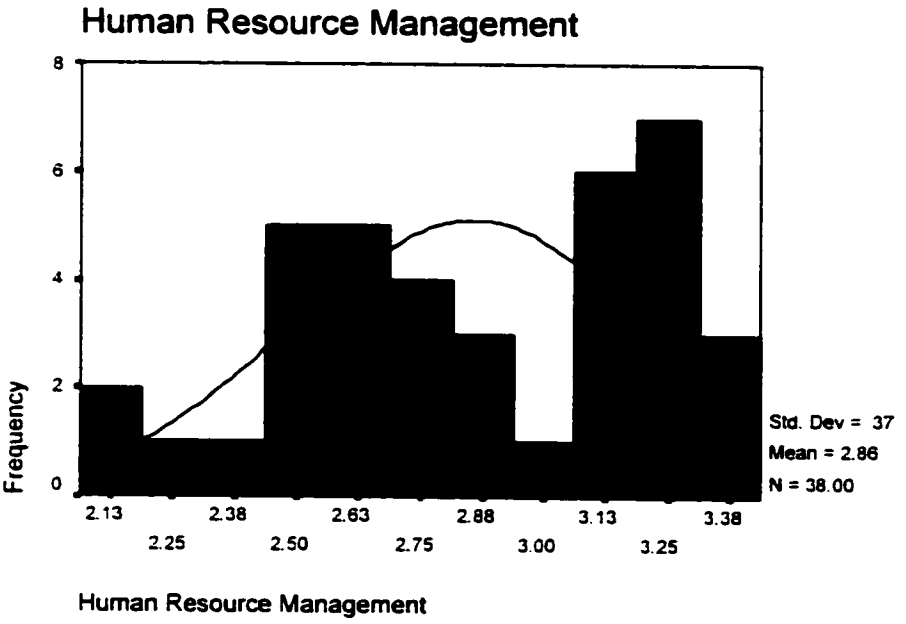
Conflict Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.53	1	2.6	2.6	2.6
	1.97	1	2.6	2.6	5.3
	2.00	1	2.6	2.6	7.9
	2.17	1	2.6	2.6	10.5
	2.20	1	2.6	2.6	13.2
	2.23	1	2.6	2.6	15.8
	2.25	1	2.6	2.6	18.4
	2.27	1	2.6	2.6	21.1
	2.33	1	2.6	2.6	23.7
	2.43	1	2.6	2.6	26.3
	2.44	1	2.6	2.6	28.9
	2.45	1	2.6	2.6	31.6
	2.50	1	2.6	2.6	34.2
	2.58	1	2.6	2.6	36.8
	2.60	3	7.9	7.9	44.7
	2.63	1	2.6	2.6	47.4
	2.67	1	2.6	2.6	50.0
	2.68	1	2.6	2.6	52.6
	2.70	1	2.6	2.6	55.3
	2.73	2	5.3	5.3	60.5
	2.74	2	5.3	5.3	65.8
	2.77	1	2.6	2.6	68.4
	2.80	3	7.9	7.9	76.3
	2.83	1	2.6	2.6	78.9
	2.90	1	2.6	2.6	81.6
	2.92	1	2.6	2.6	84.2
	2.93	1	2.6	2.6	86.8
	3.00	1	2.6	2.6	89.5
	3.03	1	2.6	2.6	92.1
	3.10	2	5.3	5.3	97.4
	3.12	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Conflict Management
Frequency
10
8
6
4
2
0
1.50
1.63
1.75
1.88
2.00
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
Std. Dev = .35
Mean = 2.60
N = 38.00
Conflict Management

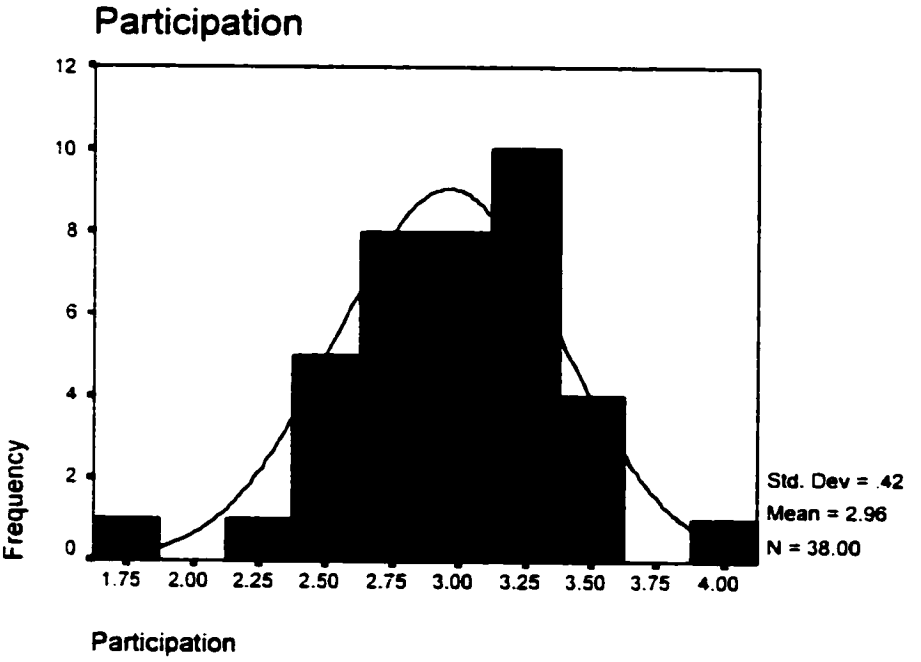
Human Resource Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.07	1	2.6	2.6	2.6
	2.13	1	2.6	2.6	5.3
	2.23	1	2.6	2.6	7.9
	2.38	1	2.6	2.6	10.5
	2.45	1	2.6	2.6	13.2
	2.47	2	5.3	5.3	18.4
	2.50	1	2.6	2.6	21.1
	2.53	1	2.6	2.6	23.7
	2.57	1	2.6	2.6	26.3
	2.58	1	2.6	2.6	28.9
	2.63	2	5.3	5.3	34.2
	2.64	1	2.6	2.6	36.8
	2.73	2	5.3	5.3	42.1
	2.78	2	5.3	5.3	47.4
	2.90	1	2.6	2.6	50.0
	2.93	2	5.3	5.3	55.3
	2.97	1	2.6	2.6	57.9
	3.07	2	5.3	5.3	63.2
	3.10	1	2.6	2.6	65.8
	3.13	1	2.6	2.6	68.4
	3.14	1	2.6	2.6	71.1
	3.16	1	2.6	2.6	73.7
	3.23	3	7.9	7.9	81.6
	3.25	2	5.3	5.3	86.8
	3.30	2	5.3	5.3	92.1
	3.33	1	2.6	2.6	94.7
	3.34	1	2.6	2.6	97.4
	3.35	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Human Resource Management
Frequency
8
6
4
2
0
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
Std. Dev = .37
Mean = 2.86
N = 38.00
Human Resource Management

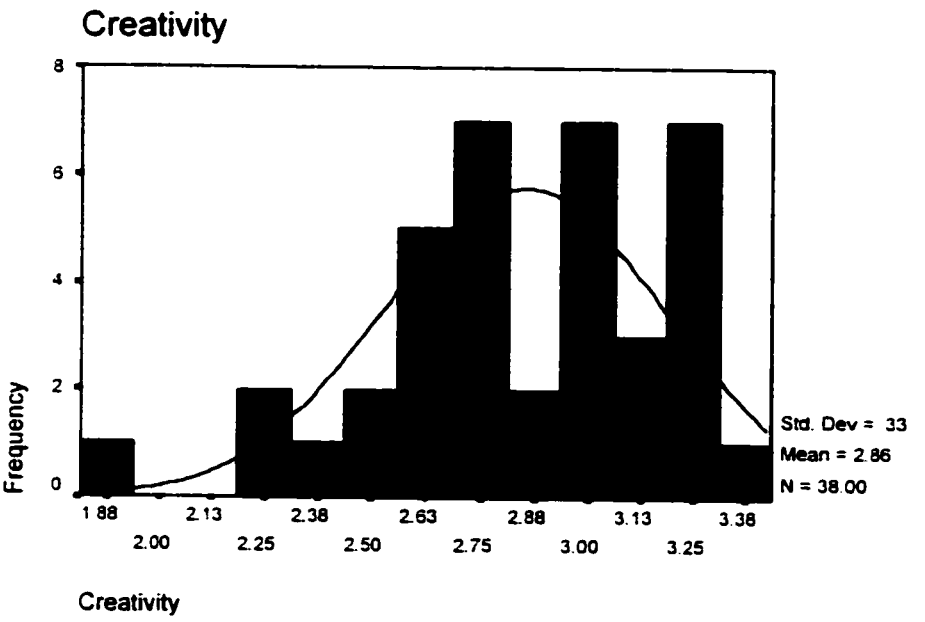
Participation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.80	1	2.6	2.6	2.6
	2.19	1	2.6	2.6	5.3
	2.43	2	5.3	5.3	10.5
	2.45	1	2.6	2.6	13.2
	2.47	1	2.6	2.6	15.8
	2.50	1	2.6	2.6	18.4
	2.63	2	5.3	5.3	23.7
	2.67	1	2.6	2.6	26.3
	2.70	1	2.6	2.6	28.9
	2.77	2	5.3	5.3	34.2
	2.83	1	2.6	2.6	36.8
	2.87	1	2.6	2.6	39.5
	2.93	1	2.6	2.6	42.1
	2.97	1	2.6	2.6	44.7
	2.98	1	2.6	2.6	47.4
	3.01	1	2.6	2.6	50.0
	3.04	1	2.6	2.6	52.6
	3.05	1	2.6	2.6	55.3
	3.07	1	2.6	2.6	57.9
	3.10	1	2.6	2.6	60.5
	3.13	1	2.6	2.6	63.2
	3.14	1	2.6	2.6	65.8
	3.20	1	2.6	2.6	68.4
	3.25	1	2.6	2.6	71.1
	3.27	3	7.9	7.9	78.9
	3.28	2	5.3	5.3	84.2
	3.35	1	2.6	2.6	86.8
	3.41	1	2.6	2.6	89.5
	3.43	2	5.3	5.3	94.7
	3.44	1	2.6	2.6	97.4
	3.97	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Participation
12
10
8
6
4
2
0
Frequency
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
Participation
Std. Dev = .42
Mean = 2.96
N = 38.00

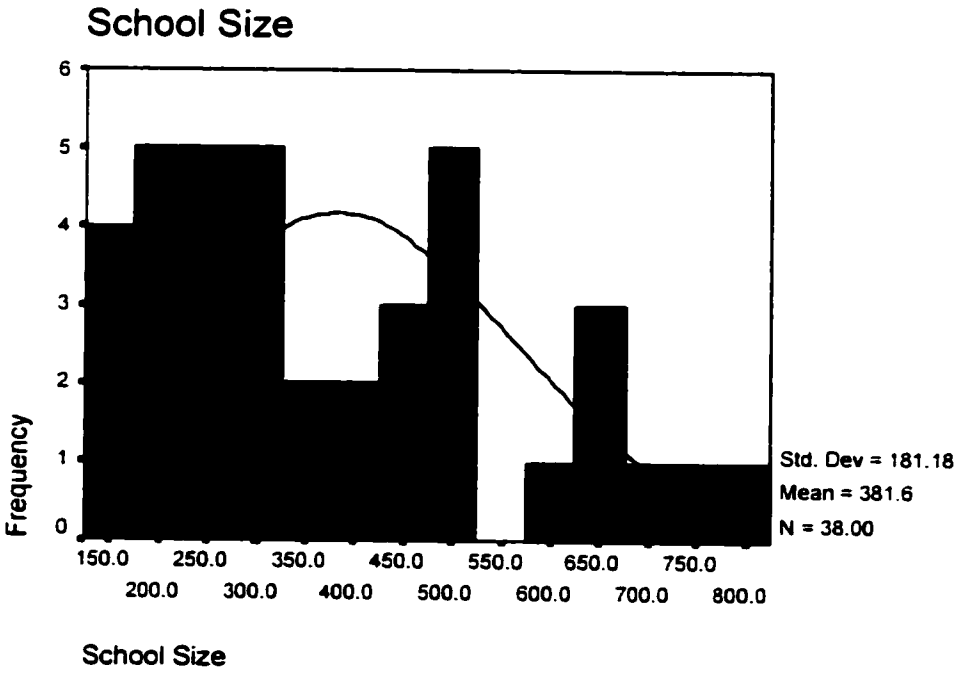
Creativity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.93	1	2.6	2.6	2.6
	2.20	1	2.6	2.6	5.3
	2.30	1	2.6	2.6	7.9
	2.43	1	2.6	2.6	10.5
	2.50	1	2.6	2.6	13.2
	2.52	1	2.6	2.6	15.8
	2.63	4	10.5	10.5	26.3
	2.68	1	2.6	2.6	28.9
	2.73	3	7.9	7.9	36.8
	2.75	1	2.6	2.6	39.5
	2.78	1	2.6	2.6	42.1
	2.80	2	5.3	5.3	47.4
	2.83	1	2.6	2.6	50.0
	2.93	1	2.6	2.6	52.6
	2.96	1	2.6	2.6	55.3
	2.97	2	5.3	5.3	60.5
	2.98	1	2.6	2.6	63.2
	3.03	2	5.3	5.3	68.4
	3.06	1	2.6	2.6	71.1
	3.08	2	5.3	5.3	76.3
	3.13	1	2.6	2.6	78.9
	3.20	2	5.3	5.3	84.2
	3.23	3	7.9	7.9	92.1
	3.28	1	2.6	2.6	94.7
	3.30	1	2.6	2.6	97.4
	3.40	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


Creativity
Frequency
8
6
4
2
0
1.88
2.00
2.13
2.25
2.38
2.50
2.63
2.75
2.88
3.00
3.13
3.25
3.38
Std. Dev = .33
Mean = 2.86
N = 38.00
Creativity

School Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	157.00	1	2.6	2.6	2.6
	159.00	1	2.6	2.6	5.3
	171.00	1	2.6	2.6	7.9
	173.00	1	2.6	2.6	10.5
	201.00	2	5.3	5.3	15.8
	203.00	1	2.6	2.6	18.4
	206.00	1	2.6	2.6	21.1
	211.00	1	2.6	2.6	23.7
	230.00	1	2.6	2.6	26.3
	233.00	1	2.6	2.6	28.9
	257.00	1	2.6	2.6	31.6
	258.00	1	2.6	2.6	34.2
	270.00	1	2.6	2.6	36.8
	286.00	2	5.3	5.3	42.1
	306.00	1	2.6	2.6	44.7
	307.00	1	2.6	2.6	47.4
	323.00	1	2.6	2.6	50.0
	349.00	1	2.6	2.6	52.6
	358.00	1	2.6	2.6	55.3
	385.00	1	2.6	2.6	57.9
	422.00	1	2.6	2.6	60.5
	426.00	1	2.6	2.6	63.2
	430.00	1	2.6	2.6	65.8
	445.00	1	2.6	2.6	68.4
	476.00	1	2.6	2.6	71.1
	489.00	1	2.6	2.6	73.7
	490.00	1	2.6	2.6	76.3
	500.00	1	2.6	2.6	78.9
	513.00	1	2.6	2.6	81.6
	587.00	1	2.6	2.6	84.2
	641.00	1	2.6	2.6	86.8
	645.00	1	2.6	2.6	89.5
	647.00	1	2.6	2.6	92.1
	678.00	1	2.6	2.6	94.7
	770.00	1	2.6	2.6	97.4
	812.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	


School Size
Frequency
6
5
4
3
2
1
0
150.0
200.0
250.0
300.0
350.0
400.0
450.0
500.0
550.0
600.0
650.0
700.0
750.0
800.0
Std. Dev = 181.18
Mean = 381.6
N = 38.00
School Size