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ABSTRACT

In Ohio, Venture Capital grants are available to schools to support their school-improvement efforts. This paper presents findings of a study that examined building principals' openness to change in the 307 Ohio schools with Venture Capital Grants. The 307 principals received by mail the Inventory of Change in Organizational Culture (Dunham and others 1989), which measured their affective, cognitive, and behavioral responses to a scenario of school-change proposals. The survey elicited a response rate of approximately 55 percent. The sample was characterized by a disproportionate number of female principals--82 males and 81 females. The principals did not show a high level of cognitive agreement with the proposed changes. Despite their negative feelings toward the proposed changes, they recognized the benefits of change to the school and were likely to take action to facilitate those changes. The women principals expressed a higher level of agreement with the changes than did the men, indicating that female principals tended to support and participate in school restructuring to a larger extent than did their male counterparts. Eight tables and a copy of the survey instrument are included. (Contains 19 references.) (LMI)

A Study of Principals' Openness to Change in 168 Restructuring Schools

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Clearly, the roles of classroom teachers and building principals are being re-defined in school restructuring literature (e.g., Lightfoot, 1986; Levine, 1988; Comer, 1988; Lieberman & Miller, 1990; Elmore, 1990; Fullan, 1993; Griffin, 1991; Martin, 1990; Bredenson, 1989; Zeichner, 1991; Prawat, 1991; Sarason, 1992). In a study of teacher empowerment (Klecker, 1996), the quality of the building principal that seemed intuitively connected to the facilitation of change in the traditional teacher-principal relationship was the building principal's "openness to change." The Inventory of Change in Organizational Cultures developed by Dunham, Grube, Gardner, Cummings, and Pierce (1989) and modified for public school use by Huang (1993), was used to survey all of the building principals in 307 Venture Capital Schools in Ohio beginning restructuring efforts. These data, collected in February and March, 1995, serve as a baseline look at three dimensions of a specific quality of the building principal. The findings of this study and the usefulness of the Inventory of Change in Organizational Culture in school restructuring environments are discussed.

In the recent era of public school reform the role of state legislatures in the public school reform effort has shifted. "If states are serious about improving the quality of education and striving for excellence, " Timar & Kirp (1989, p. 511) stated, "they must create a context in which organizational competence at the school level can develop." In the state of Ohio, this context has been created through funding from the state legislature. Venture capital grants of $25,000 per year per school have been made available to support school improvement. These venture capital grants were designed to serve as catalysts for local schools to redesign their internal structures. The venture capital grants were made available to individual schools for a period of five years on a renewable basis and were offered to "spark" school renewal efforts (Ohio Department of Education, July, 1993). The state of Ohio's commitment to restructuring was stated clearly:

> School improvement can only be achieved if there is a willingness to fundamentally restructure Ohio's education system. School improvement must focus on the development and interrelationships of all the main components of the system simultaneously - teaching and learning, assessment, governance, organization, and professional development. It must also focus on the culture of the system (Ibid, p. 6).

Local school districts were asked to nominate schools for venture capital grants. Following the district's nomination, proposals were submitted by the individual schools describing the nature of the proposed reform. Factors were identified by the Ohio

State Department of Education (July, 1993) as being essential to continuous school improvement. These evaluative criteria for the venture capital proposals were:

1. Evidence of community readiness and willingness to develop and implement new school improvement ideas and to anticipate change and reshape thinking and behavior.

2. School improvement strategies collaboratively designed by the community and integrated into the school's structure demonstrating that all children can learn.

3. Planned changes that are systematic and wide-ranging.

4. Evidence that community agencies and groups are thoughtfully and purposefully involved.

5. School improvement strategies that focus on learning.

6. Evidence that teachers are given expanded roles in planning and implementing change.

7. Policies and practices that contribute to the success of all students.

8. School improvement plans that leverage existing dollars and resources and identify new monies and resources for the support of improvement efforts (p. 10).

Nine restructuring models were selected by the Ohio Department of Education as examples for schools. These were: Accelerated Schools, Classroom of the Future, Coalition of Essential Schools, Effective Schools Process, North Central School Improvement, Ohio Community Learning Experience, Outcome-Based Education, School Development Program and Success for All. Additionally, schools were invited to design their own restructuring models (Ohio Department of Education, July, 1993). As a condition for applying for funding, the individual schools had to provide evidence that at least 80% of the school staff was supportive of the proposed ideas contained in the proposal as well as evidence that the building staff was poised and ready to undertake the proposed changes. The proposals were submitted by Venture Capital Coordinators in each school. This Coordinator was in some cases, but not all, the building principal.

Objectives of the Study

The objectives of this study were to examine and describe the building principal's openness to change in the 307 restructuring Venture Capital Schools

funded in rounds I and II by the state of Ohio. Questions that guided this inquiry were:

1. How open to change are the building principals in the 307 Venture Capital Schools as they begin restructuring?

2. What are the relationships between building principals' demographic characteristics and their openness to change?

Methodology

This study was a descriptive research study using mailed survey questionnaires.

Sample

The sample for this study was a census of the population of the 307 building principals working in the Venture Capital Schools funded in rounds I and II by the state of Ohio. (The 307 Venture Capital Schools comprise about 10% of the schools in the state of Ohio).

Instrument

The Inventory of Change in Organizational Culture (Appendix) used in this study consisted of a scenario describing several changes in school culture found in restructuring literature (Huang, 1993), followed by an 18-item questionnaire measuring the respondents' attitude toward those changes on a Likert-type five point scale ranging from (1) strongly disagree to (5) strongly agree.

The Change in Organizational Culture instrument was developed by Dunham, Grube, Gardner, Cummings, and Pierce (1989) using a population from an automobile travel club (N=473) and police officers from a mid-sized midwestern city (N=269). The definition of attitude toward change presented by these researchers was:

> Attitude toward change in general consists of a person's cognitions about change, affective reactions to change, and behavioral tendency toward change. Attitude toward a specific change consists of a person's cognitions about that change, affective reactions to that change and behavioral tendency toward that change (p. 4).

Data from the studies using responses from the travel club and the police officers were each submitted to a principal axis factor analysis followed by a Varimax orthogonal rotation by Dunham, et al. (1989). Three factors with six items each emerged from these analyses. The internal consistency coefficients for the scales ranged from .82 to .92. Table 1 presents the subscales developed by Dunham, et al. (1989).

Table 1. Subscales of the Inventory of Change in Organizational Culture

Factor I: Affective Reaction to Change	
Item 3.	I would resist the change.
Item 4.	I don't like the changes.
Item 7.	The changes would frustrate me if they happened in my school.
Item 12.	I would suggest these changes for my school.
Item 13.	Most of the changes are irritating.
Item 18.	I would hesitate to press for such changes.
Factor 2: Cognitive Reaction to Change	
Item 1.	I would look forward to such changes at my school.
Item 2.	The changes would benefit my school.
Item 5.	Most school members would benefit from the changes.
Item 6.	I would be inclined to try the changes.
Item 9.	I would support the changes.
Item 11.	Other people would think that I support the changes.
Factor 3: Behavioral Reaction to Change	
Item 8.	The changes would help me perform better at work.
Item 10.	The changes tend to stimulate me.
Item 14.	The changes would help improve unsatisfactory situations at my school.
Item 15.	I would do whatever possible to support the changes.
Item 16.	I would find going through these changes to be pleasing.
Item 17.	I would benefit from the changes.

(Dunham, et al., 1989, p. 11)

Factor 1 was described by Dunham, et al. as a measure of affective reactions toward change, by this the authors meant the extent to which an individual tends to enjoy change in organizations.

Factor 2 was described by the authors as cognition toward change, that is the extent to which an individual recognizes that change is occurring and tends to benefit an organization and its members.

Factor 3 was described by Dunham, et al. as an individual's behavioral tendency toward change, that is the extent to which a person would take actions to support or initiate changes.

Huang (1993) modified the instrument for use in a study of 235 elementary principals in Ohio. In his revision, a scenario describing changes advocated in the restructuring literature was added to precede the 18-item instrument. The reliability coefficients for the instrument in Huang's study were: .93 for the Cognitive subscale, .94 for the Affective subscale, .94 for the Behavioral subscale, and .98 for the total scale. Huang addressed the content validity of this instrument for use with public school principals. The instrument was reviewed by four professors in educational administration and two public school principals (Appendix C, Huang, 1993).

Pilot Study of the Inventory of Change in Organizational Culture

Permission was obtained from Dunham to use the instrument in this study. The scenario was revised by changing the identity of the principal in the scenario from "Mary" to a gender-ambiguous "Chris." A pilot study was necessary as Huang had used the instrument with elementary principals only. Principals from 150 schools that were representative of the 307 Venture Capital Schools by level (i.e., elementary, middle school/jr. high school, high school) were included in the pilot study. Surveys were mailed for the pilot study January 15, 1996. Returns were received from 85 principals (56.6% return-rate). Middle school and high school principals were overly represented in the pilot sample. As the purpose of the pilot study was to extend the use of the instrument the pilot sample was satisfactory.

In reviewing the items of the Inventory of Change in Organizational Cultures, items 3, 4, 7, 13, and 18, were identified as negatively scored on the five-point rating scales (1=strongly disagree to 5=strongly agree). These items were:

Item 3.	I would resist the change
Item 4.	I don't like the changes
Item 7.	The changes would frustrate me if they happened in my school
Item 13.	Most of the changes are irritating
Item 18.	I would hesitate to press for such changes

The items were reverse scored using SAS in order to provide a meaningful subscale score that could be compared with the other subscales. After recoding these items, a principal axis factor analysis with a Varimax orthogonal rotation was used to analyze the pilot data. Through these analyses, the subscales identified by Dunham, et al (1989) and used by Huang (1993) were found to be stable. Cronbach's coefficient alpha reliabilities calculated with the pilot study data were: Affective, .92; Cognitive, .94; and Behavioral, .93. The instrument was deemed acceptable for the larger study.

Demographic Data

Demographic data for the building principals were collected through self-report questionnaires included in the mailing.

Data Collection

The data were collected from the building principal as a part of a total "snapshot in time" of each Venture Capital School; the larger study also surveyed each classroom teacher (N=10,544) within each school for a study of teacher empowerment. A packet containing a cover letter, a questionnaire for each classroom teacher (required for the larger study) and building principal was mailed to each Venture Capital School coordinator, with a self-addressed postage-paid return envelope, February 13, 1995. An envelope was attached to each instrument with instructions to the respondents to complete the survey, seal the envelope, identify the envelope with his or her initials only and return it to the Venture Capital School coordinator. (This minimal identification was required to aid the Venture Capital coordinator with data collection). The use of the "total picture" metaphor to clarify the data collection for the larger study was detailed by Klecker & Loadman (1995).

Return Rate

Responses were received from 168 of the 307 Venture Capital School building principals surveyed for a return-rate of 54.7%. Chi-square tests of goodness of fit were used to compare the representativeness of the schools in which the principals worked with the 307 Venture Capital Schools in the population by level (i.e., elementary-55%, middle school/jr. high school-20%, high school-25%), restructuring model (10), round of funding (2), and region of the state (8). The schools in which the principals worked were representative of the schools in the population on all four of these variables.

Data Analysis

Frequencies and percentages were calculated to describe the demographic characteristics of the principals in the sample. Cronbach's coefficient alpha reliabilities were calculated for the three subscales. Means and standard deviations were used to describe the responses to the subscales of the Inventory of Change in Organizational Culture. A simple correlational analysis was used to compare the correlations among the subscales and total scale scores. One and two-way ANOVAs were used to explore differences in responses to the Inventory of Change in Organizational Culture by principal demographic characteristics. (Two-way ANOVAs were used for gender and level comparisons as there were more female principals at the elementary level and more male principals at the high school level). A Scheffe was used as a follow-up procedure for significant F tests of the two-way ANOVAs. Alpha was set at .01 for all statistical comparisons. The SAS GLM procedure was used for the ANOVAs as the groups had unequal Ns. Type III Sum of Square tables were used to calculate the results of the two-way ANOVAs as these presented a non-hierarchial partitioning of variance.

Results

Table 2 presents the Demographic Characteristics of the principals.

Table 2. Demographic Characteristics for the Principals Responding to the Inventory of Change in Organizational Culture

Variables	N*	%
Gender		
Female	81	49.7
Male	82	50.3
Level of Education		
Bachelor Degree	18	10.7
Masters Degree	136	81.0
Doctoral Degree	14	8.3
Years of Experience in The Principalship		
Under 5 years	51	30.4
6-10 years	40	23.8
11-15 years	50	29.8
16-20 years	16	9.5
21-25 years	8	4.8
Beyond 26 years	3	1.7
Years of Experience as a Teacher		
Under 5 years	23	13.7
6-10 years	45	26.8
11-15 years	51	30.4
16-20 years	24	14.3
21-25 years	19	11.3
Beyond 26 years	6	3.5
Current In-Service Education Status		
Enrolled in a short-term program	55	32.9
Enrolled in a degree program	20	12.0
Not currently enrolled	92	55.1

N=168 *Note: Frequencies may not sum to N because of non-response to the item.

There were approximately equal proportions of female (49.7%) and male (50.3%) principals in the sample (Table 2). The mode for "Level of Education" was a Masters Degree (81%), eleven percent of the principals had Bachelor Degrees, and 8% had Doctoral Degrees. The distribution of the responses to "Years of Experience in the Principalship" was bimodal: Thirty percent responded to the "Under 5 Years" category and 30% responded to the "11-15 years" category. Twenty-four percent of the respondents had been a principal between 6 and 10 years, 9% had been a principal for 16-20 years, 5% chose the 21-25 year category to describe their length of service, and 2% of the principals responding had been in the principalship for more than 26 years.

The most frequent response to "Years of Teaching Experience" was 11-15 years (30%). Fourteen percent had taught fewer than 5 years, 27% had taught 6-10 years, 14% responded 16-20 years, 11% had taught 21-25 years, and 3% had taught longer than 26 years. The modal response for "Current In-Service Education Status" was "Not currently enrolled (55%). Thirty-three percent were enrolled in short-term programs and 12% were enrolled in a degree program at the time of the survey.

In the spring of 1995, the time of the survey for this study, there were 999.59 female elementary school principals and 92.24 female secondary school principals working in the state of Ohio. There were 1766.97 male elementary principals and 646.67 male secondary principals (Ohio Department of Education, Education Management Information System). Percentages were calculated from these numbers: female elementary 28.5%; female secondary 2.6%; total percentage of female principals 31.1%; male elementary 50.4%; male secondary 18.4%; total percentage of male principals 68.8%. The sample of building principals in this study included 168; of these 163 responded to the gender variable. As jr. high/middle school principals were subsumed under the "elementary" and "secondary" categories in the state-wide statistics, a Chi-square test of goodness of fit on gender (Table 3) was possible with the overall percentages only.

Table 3. A Chi-square Test of Goodness of Fit for the Principals in the Sample to Principals Working in Ohio Public Schools by Gender

	Female	Male
Expected	50.69	112.14
Observed	(81)	(82)

$X^2(1, N = 163) = 27.33, p < .05$

The calculated Chi-square value was 27.33 (Table 3). With one degree of freedom at the .05 level of significance, the tabled Chi-square was 3.84. Thus, with a 95 percent confidence level, the principal sample in this study did not represent the population of building principals in the state of Ohio on gender. The sample was clearly overly represented by female principals. (This cell of the Chi-square table contributed 18.12 to the overall Chi-square.) Data were not available on the gender of building principals in the 307 Venture Capital schools.

Analysis of the responses to the Inventory of Change in Organizational Culture began with the calculation of Cronbach's coefficient alpha reliabilities for the subscales with the data from 168 principals. These were: Affective, .90; Cognitive, .94; and Behavioral, .93. Next, simple correlations of the subscales and total scale score were calculated and are presented in Table 4.

Table 4.. Correlations Between the Subscales and Total Scale Score of the Inventory of Change in Organizational Culture

	Affective	Behavioral	Cognitive	Total ICOC
Affective	1.000			
Behavioral	-0.658	1.000		
Cognitive	-0.703	0.909	1.000	
Total ICOC	-0.348	0.914	0.874	1.000

N=168

The results of the simple correlations of the subscales and total scale of the Inventory of Change in Organizational Culture using data from 168 principals were somewhat surprising (Table 4). The results indicated that there was a high positive correlation between the Behavioral and Cognitive Subscales (0.909). The Behavioral and Cognitive Subscales also had high positive correlations with the Total Scale (0.914 and 0.874 respectively). However, the Affective Subscale had high negative correlations with both the Behavioral (-0.658) and Cognitive (-0.703) Subscales. The Affective Subscale had a moderately negative correlation with the Total Scale (-0.349). The negative correlations of the Affective Subscale with the Total Scale score precluded using a total scale score. Thus, total scale score was not reported in further analyses of the Inventory of Change in Organizational Culture.

Table 5 presents the means and standard deviations of the Inventory of Organizational Culture subscales.

Table 5. Means and Standard Deviations of the Principals' Responses to the Inventory of Change in Organizational Culture Subscales

Variable	N	Mean	Std. Dev.
Affective Subscale	168	2.29	0.59
Cognitive Subscale	168	3.85	0.76
Behavioral Subscale	168	3.66	0.79

Note: Scale range 1=strongly disagree to 5=strongly agree
Each subscale has 6 items

The item scale range of the Inventory of Change in Organizational Culture was 1 to 5 on a Likert-type rating scale where 1=strongly disagree and 5=strongly agree (Table 5). The item scale midpoint was 3.00 (neutral). The Affective Subscale, measuring how principals felt about changes in school organization, had the lowest

mean rating (2.29); this rating was below the scale midpoint of 3.00 indicating that the principals did not feel in agreement with the proposed changes. The Cognitive Subscale, measuring how the principals thought about the changes, had the highest mean rating (3.85). This rating was above the scale midpoint indicating that the principals were intellectually in agreement with the proposed changes. The principals' mean scores on the Behavioral Subscale (3.66) were above the scale midpoint. This subscale was designed how principals behaved toward school changes.

The mean ratings for the Inventory of Change in Organizational Culture subscales and total scale were next compared by principal demographic characteristics: gender; level of school (elementary, middle school/jr. high school, and high school); level of education; years in principalship; years of teaching experience; and current educational participation. One-way ANOVAs were used for all variables except gender and level; two-way ANOVAs were used to test gender and level as these variables were related, that is, there were more female elementary principals and more male high school principals. No differences were found on any of the one-way ANOVAs. There were no differences in principals' responses to the subscales by: the level of education of the principal, years in principalship; years of teaching experience; or his or her current educational participation. Tables 6 presents the means and standard deviations of the Inventory of Change in Organizational Culture Subscales by Gender and Level.

Table 6. Means and Standard Deviations of the Inventory of Change in Organizational Culture Subscales by Gender and Level

		Elementary			Middle School/ Jr. High School			High School		
Variable	Gender	N	Mean	SD	N	Mean	SD	N	Mean	SD
Affective Subscale	Female	58	2.24	0.55	10	2.07	0.34	10	2.12	0.35
	Male	39	2.40	0.65	18	2.48	0.61	25	2.35	0.73
Cognitive Subscale	Female	58	3.86	0.61	10	3.80	0.56	10	3.90	0.43
	Male	39	3.50	0.93	18	3.39	0.97	25	3.45	0.97
Behavioral Subscale	Female	58	4.05	0.59	10	3.98	0.65	10	4.08	0.39
	Male	39	3.65	0.87	18	3.62	0.92	25	3.69	0.93

Note: Scale range = 1-5 1=strongly disagree 5=strongly agree
Each subscale has 6 items
N=165

The total N of the principals responses reported in Table 6 is 165 as three of the principals (one elementary and two middle school/jr. high school) did not respond to the "gender" item. Two-Way ANOVAs by gender and level were conducted to explore the relationship of these variables to the subscale and total scale responses, alpha was set at .01. The Scheffe method (with alpha set at .01) was used as a post hoc analysis. There were no statistically significant ($p<.01$) interactions of gender and

level on any of the two-way ANOVAs. There were no statically significant ($p<.01$) differences on the Affective Subscale by either gender [$F(1,154)=5.44$, $p>.01$], or level [$F(1,154)=0.30$, $p>.01$]. Tables 7 and 8 present the results of the ANOVAs of the Cognitive and Behavioral Subscales.

Table 7. Results of the Two-Way ANOVA of the Cognitive Subscale of the Inventory of Change in Organizational Culture by Gender and Level

Source	DF	SS	MS	F	p
Gender	1	3.8938	3.8938	6.70	0.0106*
Level	2	0.1017	0.0509	0.09	0.9162
Level*Gender	2	0.0051	0.0025	0.00	0.9955
Error	154	89.5321			
Total	159	93.5327			

*$p<.01$

The mean of female principals' responses (4.04) was significantly ($p<.01$) higher than the mean of male principals' responses (3.65) for the Cognitive Subscale. There were no statistically significant ($p<.01$) differences by level (Table 7).

Table 8. Results of the Two-Way ANOVA of the Behavioral Subscale of the Inventory of Change in Organizational Culture by Gender and Level

Source	DF	SS	MS	F	P
Gender	1	4.3967	4.3967	6.96	0.0092*
Level	2	0.1558	0.0779	0.12	0.8841
Level*Gender	2	0.0436	0.0218	0.03	0.9661
Error	154	97.3143			
Total	159	101.9104			

*$p<.01$

The mean of female principals' responses (3.86) was significantly ($p<.01$) higher than the mean of male principals' responses (3.46) for the Behavioral Subscale. There were no statistically significant ($p<.01$) differences by level (Table 8).

Discussion and Conclusions

The Sample of Principals

The Venture Capital Schools in which the 168 responding principals worked were representative of the Venture Capital School population by level, restructuring model, round of funding, and region of the state. Gender data for principals working in the 307 Venture Capital Schools were not available for comparison, however, comparing the sample of principals with the state gender proportions (Table 3) found that there were more than an expected number of female principals in the sample.

There were 81 female principals and 82 male principals in the sample for this study (5 principals did not respond to the gender item). This highly disproportionate number of female principals in the Venture Capital School sample raises several questions. Is the number of female principals in the 307 Venture Capital Schools of the population disproportionately high? Are female principals more likely to become involved in school restructuring projects? Were female principals more likely to respond to the request for data? Is the higher proportion of female principals due to the high proportion of elementary schools in the population? This was an unexpected finding in this study and one that should lead to further research.

The large number or principals in this sample work in schools that were representative of the 307 Venture Capital Schools on school level, restructuring model, round of funding, and region of the state. The schools were not compared for representativeness on other variables, for example, the socioeconomic level of the students, the location of the school (i.e., suburban, rural, or inner-city), or by the number of teachers within each school. Some of these variables may affect how principals respond to questions of change. Data are available in this study to compare the schools in which the principals work on these variables.

The principal sample was clearly not representative by gender of the population of principals working in the state of Ohio at the time of the study . Additionally, information on the gender of the 307 principals in the population of the study were unavailable. Findings from the study may be limited to the 168 principals in the sample.

How Open to Change Were the Principals in the Sample at the Point of Time of the Study?

This question can be answered on the three dimensions of the Inventory of Change in Organizational Culture. Openness measured on how the principals felt about the changes described in the scenario was below the neutral 3.00 of the rating scale (2.29) (Table 5). The variance on this subscale was the lowest of the three (S.D. 0.59). The principals did not feel in agreement with the proposed changes. The total sample mean on the Cognitive subscale was the highest of the three (3.85) yet fell between the neutral 3.00 and the 4.00 "agree" of the rating scale. The principals did not report a high level of cognitive agreement with the usefulness of the proposed changes for their schools. The principals in the sample were also between the neutral scale point and the 4.00 "agree" mark in their rating of behaviors they would employ to facilitate changes (3.66). These data are useful as baseline measures; repeated measures over the five-year restructuring period and beyond should illuminate the importance of a building principal's "openness" and its relationship to student learning.

The Correlations of the Subscales of the Inventory of Change in Organizational Culture

Substantively, these subscale correlations are surprising (Table 4). The results from the analysis for this study of 168 Venture Capital School principals were that the extent to which a principal recognized that change was occurring and was good for an organization was highly correlated with the actions that the principal reported that he or she would be willing to take to facilitate the changes. The actions that the principal was willing to take to facilitate change was slightly lower than the recognition of the benefits of the changes. However, how the principal reported that he or she felt about the changes in the school scenario was nearly the opposite of how he or she reported thinking and behaving.

The principals responses may be summarized as, "No matter how much I dislike the school restructuring changes, I recognize that the changes will be good for the schools and I will take action to facilitate the changes." That this is the direction of the principals' responses to the Inventory of Change in Organizational Culture is indicated by the means for the three subscales (Table 5). The mean for the 168 principals on the Affective subscale was 2.29. This was below the scale "neutral" midpoint of 3.00; the principals' feelings about the school changes were negative ("disagree"). The highest subscale mean was the mean for the Cognitive subscale (3.85); the principals' ratings of how they thought about the changes was above the "neutral" scale midpoint but not quite to the "agree" point. The principals rated the actions they would take to facilitate school changes on the Behavioral subscale. This subscale mean of 3.66 was also between neutral and "agree" and was just slightly below the recognition of the benefits of changes. Overall, the principals had negative feelings about the changes, and were less than in agreement with the recognition that the school changes would benefit the school and that they were willing to take actions to facilitate the changes. Huang (1993), in a study of 257 elementary principals, found the same mean comparisons, that is, the Affective subscale mean was the lowest, the Cognitive subscale mean was the highest, and the Behavioral subscale mean was just below the Cognitive.

It is unclear whether the findings from the sample of 168 building principals from 307 schools can be generalized beyond the sample. Two findings support the generalization: (1) the Venture Capital Schools in which the 168 principals work are representative of the 307 schools in the population by school level, restructuring model, round of funding, and region of the state, and (2) Huang (1993) found similar differences in the level of subscale responses. The consistency of the findings of principals' responses to the Inventory of Change in Organization Culture in this study with those of Huang (1993) has implications for the Venture Capital Schools restructuring teams.

From these findings, it can be concluded that to increase the building principals' actions to facilitate school change, steps should be taken to help them recognize that the changes will lead to increased student learning (feelings about change can be ignored). The belief that the school changes will result in increased student learning may require a great "leap of faith" on the part of both the building principal and the school community (or a lot of solid evidence from future research!). Comparisons of the variability in building principals' openness to change over the five-year Venture Capital School efforts and its relationship with student achievement scores is suggested as a area for further research.

What Are the Relationships Between Building Principal Demographic Characteristics and Their Openness to Change?

There were no statistically significant ($p<.01$) differences found by the building principal's: (1) level of education, (2) years of experience in the principalship, (3) years of experience as a teacher, (4) current in-service education status, or the (5) level (elementary, middle school/jr. high school, high school) of the school in which the principal worked and his or her openness to change on any of the three dimensions measured. The only differences found were by gender.

Gender Differences on the Cognitive and Behavioral Subscales

Differences by gender and level were explored with two-way ANOVAs with Scheffe follow-up tests (unequal Ns). Alpha was set at .01 for both the omnibus F test and for the Scheffe follow-up tests. There were no statistically significant ($p<.01$) interactions by gender and level on any of the two-way ANOVAs of the three subscales. There were no statistically significant ($p<.01$) differences by gender or level on the Affective subscale. There were no statistically significant ($p<.01$) differences by level on either the Cognitive or Behavioral subscales.

On both the Cognitive and Behavioral subscales the means for female principals were statistically significantly ($p<.01$) higher than the means for male principals--a higher mean indicated a higher level of agreement with the changes proposed in the scenario. The means for female principals on these two subscales were Cognitive (4.04) and Behavioral (3.86). The means for male principals on the two subscales were Cognitive (3.65) and Behavioral (3.46). Huang (1993) also found gender differences, with the mean of female elementary principals higher than the mean of male elementary principals, on the Cognitive subscale only.

Female school principals in the sample of Venture Capital Schools recognized the benefits of school change to a higher degree than did the male principals and they reported a higher level of agreement with the actions they were willing to take to facilitate the changes. This finding with the finding of the disproportionate number of female principals in the sample of Venture Capital Schools in this study indicates that female principals report supporting and participating in school restructuring to a larger

extent than do male principals. The gender proportions of building principals in the 307 Venture Capital Schools in the population would further illuminate this ad hoc hypothesis, however, these data are not available. The findings in this study strongly suggest further research on the gender differences of building principals in school restructuring efforts.

The Usefulness of the Inventory of Change in Organizational Culture in School Restructuring Environments

The Inventory of Change in Organizational Culture selected to measure the building principal's openness to changes typically found in restructuring schools in this study is a useful instrument for further research in the Venture Capital Schools and other school restructuring environments. The scenario preceding the questionnaire well describes many of the changes advocated in the school restructuring literature. However, the instrument cannot be used to obtain a total scale score because of the negative correlations between the affective subscale and the other subscales scores and the total scale score. The subscales are reliable with content validity of items and provide useful information; the subscale scores only should be used in further research. Further, the instrument would benefit by expanding the rating scale from 5-points to at least 7-points to allow for more variability in the principals' responses.

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APPENDIX

INSTRUMENT

Part 1.

Instructions: Please read the following scenario, then respond to the questions on the reverse side of this page as you think about the proposed changes described in the scenario.

Wilson School has a strong tradition of high standardized test scores and high attendance rates. Teachers are used to the school administrative operation. Recently, Chris was appointed as the new principal of the school. Chris is enthusiastic about initiating some changes in the school.

One of the changes Chris proposes is to adopt a new school motto, "Growth Through Self-management." Chris believes teachers and students should be given more legitimate authority to decide their own school lives. Chris maintains the school should be managed by its teachers, students, and parents, not by administrative authority only. One of the ways this commitment to decision making will be demonstrated is to have a monthly "town meeting" for all involved to air opinions and concerns.

Another important change Chris seeks is to ask teachers, staff, and parents to select their own representatives to form a Teacher-Staff-Parent (TSP) committee. Chris is a member of the committee but does not chair it. The TSP committee's mission is to collectively manage and improve the school's operational system. The committee members will meet regularly twice a month. School policies must get approval from the committee, and the whole staff must vote on important issues regarding personnel, program, and budget. Chris will implement the school policies developed by the committee rather than make unilateral policies. The committee can change decisions that Chris proposes so long as the faculty and parents will support the new decision.

The third change is to adopt peer- and parent-evaluation to supplement but not replace administrator-evaluation. Chris proposes that teachers selected from each grade should work with parent representatives to evaluate teachers' performance and school outcomes. Such an evaluation team can develop criteria and procedures based on group consensus. Their evaluation results will be used for in-service training and tenure.

In addition, Chris plans to implement a "student management" ideal. A student court, consisting of a group of students with two advisory teachers, will be formed to implement student-proposed regulations and to deal with appeals on disciplinary issues. Chris plans to recommend a seasoned teacher to be one of the advisory teachers because of his/her reputation for fairness.

Furthermore, the school's annual recognition assembly will be changed to a class-centered celebration. Each class, based on its members' decision, can design their own recognition programs, awards, and can invite their own guests.

Chris is excited about the proposed changes. Chris believes these changes will enhance Wilson's tradition of excellence. **(Please turn to the other side of this page).**

Part 2. Instructions: Now circle a number which indicates your response as principal to the changes in the scenario. Think of the changes as a whole rather than each individual part.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I would look forward to such changes at my school.....	1.....	2.....	3.....	4.....	5.....
2.	The changes would benefit my school.....	1.....	2.....	3.....	4.....	5.....
3.	I would resist the change.....	1.....	2.....	3.....	4.....	5.....
4.	I don't like the changes.....	1.....	2.....	3.....	4.....	5.....
5.	Most school members would benefit from the changes.....	1.....	2.....	3.....	4.....	5.....
6.	I would be inclined to try the changes.....	1.....	2.....	3.....	4.....	5.....
7.	The changes would frustrate me if they happened in my school.....	1.....	2.....	3.....	4.....	5.....
8.	The changes would help me perform better at work.....	1.....	2.....	3.....	4.....	5.....
9.	I would support the changes.....	1.....	2.....	3.....	4.....	5.....
10.	The changes tend to stimulate me.....	1.....	2.....	3.....	4.....	5.....
11.	Other people would think that I support the changes.....	1.....	2.....	3.....	4.....	5.....
12.	I would suggest these changes for my school.....	1.....	2.....	3.....	4.....	5.....
13.	Most of the changes are irritating.....	1.....	2.....	3.....	4.....	5.....
14.	The changes would help improve unsatisfactory situations at my school.....	1.....	2.....	3.....	4.....	5.....
15.	I would do whatever possible to support the changes.....	1.....	2.....	3.....	4.....	5.....
16.	I would find going through these changes to be pleasing.....	1.....	2.....	3.....	4.....	5.....
17.	I would benefit from the changes.....	1.....	2.....	3.....	4.....	5.....
18.	I would hesitate to press for such changes.....	1.....	2.....	3.....	4.....	5.....

Instrument developed by Randall B. Dunham, Ph.D., University of Wisconsin, Madison, 1989. Thank you again for your time!!

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