

*Original Paper*

# The Infrastructure of School Culture: Measuring Commitment, Discourse, Efficacy, and Sensemaking in Adequate Yearly Progress

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## **Abstract**

*While achievement test results lead to **after-the-fact** AYP results, this research delves into measures behind and beyond test scores, the **matter-of-fact** workplace norms of schools. Elementary teachers completed items in the VISTAA survey as analysis revealed five constructs of school culture: commitment to student learning, commitment to collegiality, discourse, efficacy, and sensemaking. As a single aggregate factor, defined standard deviation gains in the school culture composite increased the likelihood of attaining AYP by 81%. The results also show positive associations for individual predictors concerning the infrastructure of school culture with the outcome of AYP.*

## **Keywords**

*adequate yearly progress, collaboration, culture, discourse processes, leadership, organizational theory/change, teacher quality, teacher characteristics*

Lo, the unbounded sea,  
On its breast a ship starting, spreading all sails, carrying even her mainsails,  
The pennant is flying aloft as she speeds so stately—below emulous waves press forward,  
They surround the ship with shining curving motions and foam.

Walt Whitman (1993), “The Ship Starting”

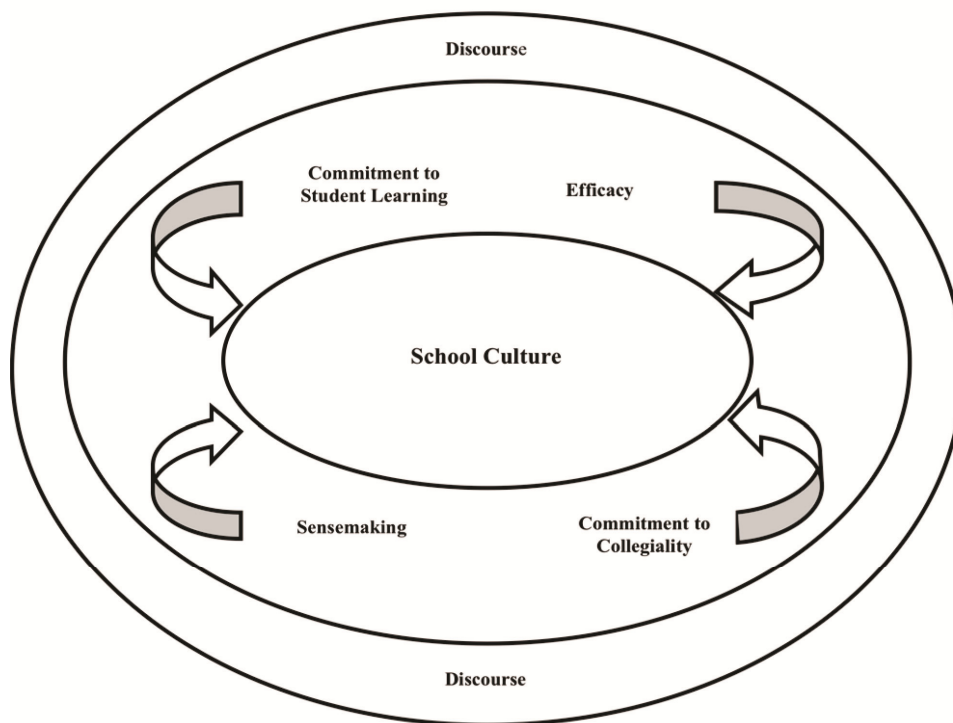
## **1. Introduction**

The quality of education is ever before us as an “unbounded sea”, with the ante continually raised by the current United States Secretary of Education, once serving notice to the bottom 5% or 5,000 schools characterized as “dropout factories” to “turnaround” (Gewertz, 2009). Raising the bar higher has now drawn teacher quality in underperforming schools to the forefront of No Child Left Behind legislation (Blad, 2013). Regardless of the shifting emphases by the leading Secretary, the mandate of

Adequate Yearly Progress (AYP) continually presses K-12 education. In 2002, landmark No Child Left Behind legislation elevated the quality of education to a fundamental government policy concern, with AYP expected of all schools. When student achievement meets or exceeds the government standards on tests, schools are awarded the “pennant ... as she speeds so stately” for making AYP; schools with a significant percentage of student subgroups failing to meet these standards do not achieve AYP.

An “unbounded sea” of uncertainty engulfs our nation’s “curving,” foaming feelings about public education. The annual Phi Delta Kappa/Gallup poll pinpoints a languishing crisis in confidence; 24% of the respondents in 2005 awarded public education an A or a B, in 2009 the figure slipped to 19% (Bushaw & McNee, 2009), and in 2013 the figure dropped to 18%, equaling the lowest-ever disapproval since 1998 (Bushaw & Lopez, 2013). The fallout from failing schools storms our collective psyche of public schooling. In this era of accountability, the government and public alike thus seek assurances found in standardized measures of achievement (McEwan & McEwan, 2003). This default blinds us to the many complex factors behind and beyond test scores contributing to AYP. While test results figure prominently in the metric of *after-the-fact* AYP results, this research probes the *matter-of-fact* daily events, shared experiences, and workplace norms of schools. Recognizing school culture as a precursor of performance is crucial, for the cargo of school performance ascends upon the crest of rich characteristics, or plummets due to lean school experiences. Some school voyages sail stately, while others wallow through rough high seas; much of what is reported or said of schools only skims the surface. This research plunges deeply into the vistas of school culture, sounding out what lies beneath the “emulous waves” (nautical quotes from Whitman, 1993) surrounding United States schools.

With such a spectrum of scrutiny about the quality of schools, it is vital to ask, “What are the significant cultural factors within a particular educational institution distinguishing schools attaining AYP and those schools which do not?” This study seeks to identify particular cultural covariates of (1) commitment to student learning, (2) commitment to staff collegiality, (3) discourse, (4) efficacy, and (5) sensemaking common to the successful voyage of AYP. Figure 1 depicts the swirling current of these constructs of school culture. I surmise that these five definitive cultural factors common to successful schools suggest constructs for consideration in all schools desiring success in their passages toward AYP.



**Figure 1. The five constructs of school culture**

### *1.1 A Theoretical Framework of School Culture*

Whether a school community masters or succumbs to those emulous waves depends upon the “result of culture” (O’Reilly, 1996, p. 380). Within a school setting teachers “have evolved a shared system of informal folkways and traditions that infuse work with meaning, passion, and purpose” (Deal & Peterson, 1999, p. 1). This shared system is the culture of a school. Deal and Peterson cite Waller (1932) in his venerable *Sociology of Teaching* as one of the earliest to identify the complex sets of rituals, relationships, mores, moral codes, ceremonies, and traditions unique to schools as their culture. Geertz (1973) conceptualized all of the components of school culture as an interrelated, interdependent web of significance for teachers and the school community. Sun and Scott (2005) identified conduits or barriers to organizational success as “culture bound”. Recognizing school culture is crucial, for “cultural patterns are highly enduring, have a powerful impact on performance, and shape the way people think, act, and feel” (Deal and Peterson, p. 4). Culture in the form of commitment, discourse, efficacy, and sensemaking holds the potential and becomes the kinetic energy of the enterprise of education (see Figure 1).

Perrow (1986) proposed three perspectives regarding function and control in organizations: first-order control is maintained by administrative supervision and directives, while second-order control is manifested by human resource procedures, rules, programs, and standardizations. Yet he maintained that most critical to the culture of an organization is the third-order level of control, those assumptions

and the meanings individuals make of organizational events. These “coherent actions [from which] you must allow people to make sense for themselves” (Lissack & Roos, 1999, p. 220), thereby lend an individual, self-sustaining dynamic to the workplace. Weick (1995) observed that organizations “make sense, literally and figuratively, at the bottom [and] that is all the design that is necessary” (p. 117). A bottoms-up understanding from a teacher perspective substantively depicts the infrastructure of school culture, with the case being made for culture as commitment, discourse, efficacy, and sensemaking. Greenfield (1986) advanced four guiding propositions for new and relevant research; this study particularly addresses his queries:

How is the social reality of the organization built and maintained [commitment]? What do administrators and others contribute to this process [sensemaking and efficacy, respectively]? ... What is the role of language in the building of administrative reality [discourse]? ... What constitutes good or right in administrative affairs [culture] and how can administrators gain knowledge of it? (pp. 75-76).

The answers to these questions and constructs can be drawn out from the perspectives of teachers, gathered with the promise of anonymity, and evaluated with the precision of quantitative analysis. Underscoring both Perrow and Greenfield, Rosenholtz (1989) asserted, “the ultimate social organizational variable is the meaning that the organization has for those who work within it” (p. 3). Thus, I worked from a perspective at the bottom of the organization, a vista grounded in the workplace of teachers and their experiences as follows.

### *1.2 Commitment to Student Learning*

Motivation runs strong when an endeavor is absorbing and meaningful (Danetta, 2002). Commitment is singled out among significant variables DuFour (2004) identifies as “the most important element in the improvement of any school” (p. 12). Becoming and remaining fully engaged with students demonstrates a wholehearted commitment to student learning.

### *1.3 Commitment to Collegiality*

In an engaging school culture, commitment extends beyond classroom interactions with students to another realm in which learning occurs, the context of staff interaction. A desire for collaboration is a distinction of professionals (Ebmeier & Nicklaus, 1999). Indeed, “collaboration is a social imperative. Without it we can’t get extraordinary things done in organizations” (Kouzes & Posner, 2002, p. 242). Commitment to collegiality exemplifies a pure learning organization; prizing new knowledge catalyzes and inspires organizational change.

### *1.4 Discourse*

Discourse, encompassing more than verbalization, is defined as inquiry (Sergiovanni, 1994), social exchange (Bryk & Schneider, 2002), struggle (Tusting, 2005), the representation of meaning (Barton & Hamilton, 2005), and a value-laden framework for understanding (Lavie, 2006). Talbert and McLaughlin (1994) identify discourse as crucial to schools because it leads to shared meanings in a contemporary and uncertain context.

### *1.5 Efficacy*

Efficacy is a powerful determinant of behavioral change. Efficacy is defined as one's own perceived capability to learn or perform (Pintrich & Schunk, 2002). The efficacy of teachers is propagated within individual certainty and collective convictions to bring about change and lead students to achieve. In a landmark study, teachers with a greater degree of efficacy were found to be highly motivated to teach and their students were in turn motivated to learn (Ashton & Webb, 1986).

### *1.6 Sensemaking*

The organizational context of school promulgates ambiguity. The indeterminate goals of education lead to vague standards against which to monitor success. Lest educators despair, "ambiguity is found in all aspects of organizational activity" (Weick, 2001, pp. 44-45). Sensemaking "seems to be that root activity when people deal with an unknowable, unpredictable world," (Weick, 2000, p. 233) deriving personal meaning from contemplating the context of the organization, and making sense of it.

These five constructs thus constitute the model of the workplace culture in schools for this investigation.

## **2. Methods**

In this comparative case study research concerning school cultures I used an ex post facto design, investigating whether the pre-existing conditions of commitment, discourse, efficacy, and sensemaking as reported by teachers in a given school's culture were associated with differences in schools achieving AYP and those schools which had not achieved AYP (McMillan and Schumacher, 2001). A descriptive survey probed these five constructs as "variables as they occur in natural settings" (Wiersma, 2000, p. 157), a hallmark of ex post facto design.

### *2.1 Instrument*

The results from this research would hinge on the validity and reliability of an original semantic differential questionnaire from which teacher perspectives of commitment, discourse, efficacy, and sensemaking could be analyzed. With validity and reliability assured, the study would lead to trustworthy results from the collected data. The argument for these five constructs is embedded in theory and aligned with current research, an initial foray that contributes accuracy to the research (Spicer, 2005).

A preliminary factor analysis helped confirm the validity of the constructs of cultural infrastructure in the questionnaire. The immense value of factor analysis can best be demonstrated through pilot research into the constructs of school culture (Wiersma, 2000). Personal experiences coupled with a review of the literature led to the development of a questionnaire of semantic differentials to explore an original hypothesis of three constructs of school culture, namely efficacy, sensemaking, and discourse. Enhanced after this first factor analysis, a second treatment of the final 65-item questionnaire confirmed the existence of the five constructs of school culture in this research and the acronym VISTAA became the title of the revised questionnaire, giving teachers an opportunity for Voicing

Individual and System-wide Thoughts as An Audit. In sum, the factor analysis gauged the precision or validity of the semantic differentials to distinguish the five constructs of school culture in this research.

## 2.2 Design Parameters and Sampling

As a minimum, I pursued responses from 325 elementary public school teachers spread geographically across a Midwestern state for maximum reliability. As these teachers worked under contract in public school districts, each would be highly qualified as a professional educator. Further responses to VISTAA would gather biographic data about years of total teaching experience and years of service in their current school setting.

Teachers were recruited for voluntary participation from public elementary schools, based upon reports of school AYP status in Mathematics achievement. AYP designations were readily available for each public school from the state's Department of Education. The AYP status of a school functioned as the dichotomous dependent variable in this research; either a school achieved AYP or it did not. The data gathered from teachers via the VISTAA instrument served as independent covariates in this study. The aim of the research was to use the independent variables as the predictor of school success as evidenced by the status or outcome of AYP.

To lend further reliability to the research, schools were matched, as much as was possible, across the division of their AYP status. Since the intent of this research is to identify the infrastructure of school culture, it was important to minimize the interference of competing and confounding variables. For every school surveyed which had not achieved AYP, a corresponding school achieving AYP was surveyed. This correspondence matched the schools with nearly equal staff size, similar environmental settings (the schools would be less than one mile from one another), and harmonized populations of special and general education students (see Table 1). By screening and selecting similarly distributed characteristics, this research conformed to assumptions of parametric statistical evaluation (Hittleman and Simon, 1997).

**Table 1. School Comparisons of Student Populations and Sub-Groups**

Description	School Paring A		School Pairing B	
	1noayp	2yesayp	3noayp	4yesayp
Number of Grade 4 Students Taking the Standardized Mathematics Test	46	40	71	84
Economically Disadvantaged Students	38	39	41	75
English Language Learners	0	0	31	59
Ethnicity- Asian	0	0	<	<
Ethnicity- Black	44	37	33	<
Ethnicity-Hispanic	0	<	31	69
Ethnicity- White	<	<	<	<
Female	21	23	34	38
Male	25	17	37	46

*Note.* < designates a student population of fewer than 10 students in the Demographic Reports from the state Department of Education.

### 2.3 Data Collection

While my desire was to survey 325 teachers in sixteen schools to gain a power of 99 with a small effect size of .25, when two large school districts denied permission to survey teachers, ten of those schools were not available for research. In all then, teachers in four elementary schools, with 77 respondents, consented to participate in this research, netting a power of 70 with an effect size of .25; while less than I aimed for, the responses were sufficient to carry out the intended matched samples research, comparing cultures of two schools making AYP and two which had not.

With permission and through arrangements with building principals, I met with teachers from each school to personally administer the questionnaire. After a succinct introduction to the purpose of this survey, teachers signed consent forms and received one blank VISTAA questionnaire. A unique identification number was affixed to each of the completed questionnaires and logged into a statistical database. Numeric values represented responses to the biographical information in the questionnaire. Responses to the semantic differentials also received numeric values, ranging from one to seven across the continuum of bipolar adjectives and phrases describing school culture. Once the information from completed questionnaires was entered into a statistical database, the data were double-checked for accuracy in an effort to avoid processing errors.

### 2.4 Analysis

The final factor analysis revealed seven facets of school culture surfacing in the five constructs. The constructs of commitment to student learning, commitment to collegiality, and discourse remained as single facets, while efficacy recognized two distinct tracks of professional efficacy and efficacy in student discipline, while sensemaking revealed two distinct components of leadership and of professional autonomy. Thus seven aspects of school culture became the covariates to subject in statistical analysis.

To examine the relationship between continuous measures of school culture and whether or not the school made AYP, I used logistic regression analysis (Hosmer & Lemeshow, 2000). Lewis-Beck (2000) advocates logistic regression as the “data analytic tool of choice when the equation to be estimated has a dichotomous dependent variable” (p. v). Specifically for this research, logistic regression estimates odds of the independent covariates of commitment, discourse, efficacy, and sensemaking contributing to, or predicting, the status of AYP.

## 3. Results

Following the methods outlined above, logistic regression analysis treated all of the covariates as a single, aggregate meta construct of school culture. Then the covariates were unpacked and treated individually as solo constructs that might further predict contributions to AYP.

### 3.1 Results from the Meta Construct of School Culture

The results for the logistic regression did confirm the hypothesis that commitment, discourse, efficacy, and sensemaking in their various iterations contribute significantly to the prospect of making AYP (see

Table 2). In these schools, a one standard deviation increase in the variables increase the likelihood of achieving AYP by 81%. All of these covariates as an aggregate meta construct did significantly predict AYP ( $p = .03^*$ ). For the meta construct, the coefficient B ( $B = .592$ ) expressed the log-odds relationship between these independent variables and the dependent variable of AYP, taking into account the Standard Error ( $SE = .275$ ), Wald value ( $Wald = 4.649$ ), and degrees of freedom ( $df = 1$ ) to establish significance ( $p = .03^*$ ). Logistic regression then calculated the value for the amount of increase (as the coefficient B is positive, there is an increase and expressed as exponential B, or  $\text{Exp}(B) = 1.808$ ) that can be attributed to the covariates in the meta construct. In this case, a one standard deviation increase in the combined covariates increased the odds of making AYP by 80.8%.

**Table 2. Significant logistic regression results tables,  $p^* < .05$**

Step 1	B	SE	Wald	df	p	Exp(B)
Meta Construct	.592	.264	4.649	1	.031*	1.808
(all seven covariates)						
Constant	.419	.260	2.598	1	.107	1.520
Variables entered on Step 1: Meta Construct						
Step 1	B	SE	Wald	df	p	Exp(B)
Commitment to Student Learning	.712	.264	7.259	1	.007*	2.037
Constant	.344	.246	1.951	1	.162	1.410
Variables entered on Step 1: Commitment to Student Learning						
Step 1	B	SE	Wald	df	P	Exp(B)
Sensemaking in Leadership	.712	.264	7.259	1	.007*	2.037
Constant	.344	.246	1.951	1	.162	1.410
Variables entered on Step 1: Sensemaking in Leadership						
Step 1	B	SE	Wald	df	p	Exp(B)
Efficacy in Discipline	.540	.254	4.508	1	.034*	1.716
Constant	.330	.240	1.887	1	.170	1.391
Variables entered on Step 1: Efficacy in Discipline						
Step 1	B	SE	Wald	df	p	Exp(B)
Professional Efficacy	.436	.255	2.912	1	.088	1.546
Constant	.357	.248	2.069	1	.150	1.429
Variables entered on Step 1: Professional Efficacy, marginally significant						



### 3.2 Results from Individual Covariates

In the second treatment of individual, solo variables, commitment to student learning and sensemaking in leadership both increased the likelihood of achieving AYP by 104%. Also, the significance of efficacy in discipline increased the likelihood of achieving AYP by 72%. Commitment to Student Learning was significant ( $p = .007^*$ ), predicting odds of making AYP by 104% for every standard deviation increase in the independent variable ( $\text{Exp}(B) = 2.037$ ). Sensemaking in Leadership also figured predominantly ( $\text{Exp}(B) = 2.037$ ,  $p = .007^*$ ) in attaining AYP by the same measure of 104%. Further, Efficacy in Discipline was significant ( $p = .034^*$ ) in predicting the odds of making AYP by 72% ( $\text{Exp}(B) = 1.716$ ). Finally, Professional Efficacy was only marginally significant ( $p = .088$ ) and therefore not reliable enough to predict improvement by 55% ( $\text{Exp}(B) = 1.546$ ). These results are recorded in Table 2 above.

For the remaining three covariates of Sensemaking in Autonomy ( $p = .176$ ), Discourse ( $p = .178$ ), and Commitment to Collegiality ( $p = .445$ ), differences in VISTAA responses were not at all significant. In Table 3, the coefficient B is the log-odds unit which expressed the relationship between these independent variables and the dependent variable, taking into account the Standard Error (SE), Wald value (Wald), and degrees of freedom (df) to establish Significance (Sig., or p). Logistic regression then calculated a value for the amount of increase (if positive, or a decrease if negative) expressed as exponential B, or  $\text{Exp}(B)$ , that could be attributed to the covariates. The constant values in the bottom row are used to calculate each individual covariate. Logistic regression however, did not find these three covariates to predict significant individual contributions to AYP.

**Table 3. Logistic regression results tables,  $p > .05$**

Step 1	B	SE	Wald	df	p	Exp(B)
Sensemaking in Autonomy	.332	.245	1.830	1	.176	1.393
Constant	.427	.243	3.094	1	.079	1.532
Variables entered on Step 1: Sensemaking in Autonomy						
Step 1	B	SE	Wald	df	p	Exp(B)
Discourse	.331	.246	1.811	1	.178	1.392
Constant	.336	.239	1.976	1	.160	1.399
Variables entered on Step 1: Discourse						
Step 1	B	SE	Wald	df	p	Exp(B)
Commitment to Collegiality	.186	.243	.584	1	.445	1.204
Constant	.330	.241	2.705	1	.100	1.487
Variables entered on Step 1: Commitment to Collegiality						

### 3.3 Summary

The results do indicate that the meta construct and three covariates are significant and reliable measures of school culture, and do indeed predict AYP. While not “hitting on all eight cylinders” as the cliché postures for all the covariates, there were sufficiently valid results for the outcome of AYP and non-AYP status. Interesting conclusions can be drawn from the results of this research into the cultures of AYP and non-AYP schools.

## 4. Discussion

This research originated with three theoretical orientations (discourse, efficacy, and sensemaking) and expanded to five constructs of infrastructure when commitment to student learning and commitment to collegiality surfaced in the preamble of pilot research. Wiener (1982) suggests three imperatives for theoretical relevance in research, namely “definitional precision, theoretical integration with other relevant constructs, and predictive power” (p. 418). The definitional precision of the constructs is readily apparent in their extensive presentation in the Theoretical Framework of this manuscript. These constructs also align with the theories of Deal and Peterson (1999) and Fullan (2001), and correspond to the research of Rosenholtz (1989) and Sporte, et al. (2002); hence satisfying Wiener’s demand for theoretical integration (refer to Table 4). However, with data from only 77 teachers, the predictive power of this research is admittedly weak, yet the survey in this sampling of schools does accurately and significantly depict the differences in school cultures. The identification of fitting constructs, combined with theoretical integrity and methodological validation all undergird the significance of this research.

In this sample, those elementary schools in which teachers reported stronger evidence of the constructs achieved Adequate Yearly Progress, while those schools whose teachers responded with lower ratings of the prevalence of these constructs did not achieve AYP. The study revealed that commitment, discourse, efficacy, and sensemaking are valid descriptions of teachers’ experiences in their schools. In this research, seven covariates emerged from these constructs, reliably differentiating schools along the divide of AYP. Most importantly, the meta construct of culture did reliably predict that a one standard deviation increase in culture will increase the odds of attaining AYP by 81%.

**Table 4. Parallel Constructs of School Culture**

<b>Brockberg</b>	<b>Commitment to Student Learning</b>	<b>Commitment to Collegiality</b>	<b>Discourse</b>	<b>Efficacy</b>	<b>Sensemaking</b>
Deal and Peterson, 1999	Commitment to Students, Staff, and Administration	Collegial Activities	Deciding What Is Important	Energy and Motivation of Staff	School Effectiveness; Change and Improvement
Fullan, 2001	Commitment to the Internal	Knowledge Creation and Sharing	Enthusiasm, Energy, and Hope	Moral Purpose	Understanding Change; Coherence Making
Rosenholtz, 1989	Teacher Commitment	Teacher Collaboration		Teacher Certainty	Shared Goals
Sporte, et al., 2004	Student-Centered Learning Climate	Professional Capacity	Professional Capacity		School Leadership

*Note.* Additional constructs beyond these parallels include Commitment to the External (Fullan, 2001), Teacher Learning and District Differences (Rosenholtz, 1989), and Parent and Community Partnerships and Quality Instructional Program (Sporte, 2004).

#### 4.1 Limitations

A critical effect size of .28 aligns with other research in this field of study (Smith, 2008). With this effect size, and data from 77 responding teachers, the power of this research amounts to 70, meaning that the results have a 70% chance of avoiding a Type I error (Spicer, 2005), or in other words a 30% chance of rejecting the null hypothesis when it was in fact true (and should not have been rejected and accepted as true, that there were no differences from the statistical treatment.) More cases than 77 teacher responses would have increased the power upwards of 70 and would lend more credibility to this study. While a power of 70 indicates the likelihood of making a Type I error is relatively low, the only sure way to know whether the research is free of a Type I error in results is through replication (Carroll & Carroll, 2002).

The design of this research intended to eliminate the problem of the “third variable” (Johnson & Christensen, 2000, p. 289), those extraneous, uncontrolled variables that interfere with the interpretation of results based on the planned dependent variables. The matched pairings of schools (refer to Table 2) from the same neighborhoods in the same districts is an attempt at holding the conditions constant for fair comparisons (McMillan & Schumacher, 2001). Rosenholtz (1989) calls for the matching of schools in research to approach the operative of causal effects. Whether or not these pairings are sufficiently close is a matter of professional judgment; the pairings were kept as similar as much as was possible to avoid the problem of that third competing variable.

Finally, this research does not imply causal relationships between measures of school culture and AYP. Spicer (2005) cautions, “it appears that analyses are able to provide predictions, explanations, and verification of causal processes. However, data analyses, in and of themselves provide none of these,” (Spicer, 2005, p. 79) they merely account for the differences. Rosenholtz (1989) recognizes that the terminology and explanations such as *account for*, *predict*, *demonstrate*, *can be attributed*, and *explain* “speak in the language of causality,” yet “these are statistical explanations, not causal ones. At best such analysis lends support to a theoretical argument by indicating the strength of an association between variables” (p. 11). The limitations of this research stops short of causality; the results only repeatedly show significant differences in the cultures of two elementary schools attaining AYP, and two schools which had not achieved AYP. Much further research is needed for a venture into the realm of causality.

#### *4.2 Directions for Future Research*

Most importantly, establishing greater power for this research is necessary to intensify the credibility of the results. Thus a larger scope of data from teachers in AYP and non-AYP schools would be a necessary, future pursuit. A second round of surveying would be necessary to bring generalizability to the research. Replication is critical to generalizing results beyond a particular sample (Johnson and Christensen, 2000; McMillan and Schumacher, 2001; Smith and Glass, 1987), thus further research conducted in other public elementary schools is necessary to suggest that the covariates are operative for all elementary schools. Broadening the scope of the research to middle schools and high schools would contribute to the utility of VISTAA beyond an elementary setting. Conducting the survey in other Midwestern states or expanding the reach in a national study would certainly further the impact and generalizability of the results.

This research is primarily a quantitative design. There are, however, some aspects of school culture that might be better understood through qualitative inquiry. Eisner (1997) advocates “binocular vision” as critical because “one mode of conception [quantitative] and one form of disclosure [qualitative] is simply inadequate to exhaust the richness of educational life” (p. 72). Much of the rich background leading to the construction of VISTAA emanated from qualitative methods. And the final question in VISTAA invited teachers to respond to this open-ended question, “What else do you think is important to share about your school that this questionnaire did not cover?” Written responses to this open query

provide interesting avenues for further inquiry into specific cases. Statistics do have their place as representations of complex phenomena in numbers. Yet, working in tandem, “the qualitative is creative, the quantitative is critical. The creative must come before and after the critical but it cannot take its place” (Brink, 1992, p. 371). Thus qualitative inquiry could enhance the quantitative analysis in this research.

For instance, one teacher in one school achieving AYP responded, “We all buy into the concept of the whole child, and make recommendations, then implement plans to support the child in all areas.” Schall (1983) sagely observes,

“as interacting participants organize by communicating, they evolve shared understandings around issues of common interest, and so develop a sense of the collective ‘we’ ... that is, of themselves, as distinct social units doing things together in ways appropriate to those shared understandings of ‘we’ ” (p. 560). The discourse in this particular school was significantly different than the discourse reported by teachers in all three of the other schools. A qualitative inquiry, perhaps through individual interviews or focus group sessions, might uncover more of the background and essence leading to such a commanding posture of discourse, as well as other cultural strengths evident in the teacher responses in this school to VISTAA. Unleashing the power of “we” through qualitative inquiry holds potential for other schools to emulate.

A second comment invoked the role socio-economic factors play in student achievement, which has been debated since the controversial research in the Coleman Report (1966). One teacher in a school making AYP sketched musings about “demographics of the student body (SES and race)” and “demographics about the staff (SES and race)” in the closing VISTAA query. Extracting the data from this particular school and embarking on a qualitative investigation into these thoughts might reveal reasons for the range of responses to the VISTAA prompt, “At this school, teachers believe all students can achieve.” Such qualitative inquiry could lead to a “field of discourse” (Denzin & Lincoln, 2005, p. 8) about this pivotal topic of teacher expectations and commitment within this school, and the anticipation and result of student achievement.

Qualitative inquiry on the tails of the results of the quantitative research would increase the understanding of the experiences of teachers in their schools. Replicating the quantitative research in elementary schools would lend further credibility to these initial results. Further research in middle and secondary levels and in other regions would be other possibilities for research into the effect of school culture on K-12 Adequate Yearly Progress. This research, whether in its current state or in future pursuits must be reported, if not in the public square, then most certainly in the annals of academe.

#### *4.3 Educational Significance*

Much more happens in elementary schools making Adequate Yearly Progress than teaching the content, covering the curriculum, and helping students pass tests. And there is much more involved in these schools than the mere employment of teachers with highly qualified status to ensure AYP (in this sample only two teachers were not highly qualified, one in a school making AYP and one in a non-AYP

school). The former United States Under Secretary of Education, Finn (2002) laments, standards-based accountability systems are better at identifying failing schools than at fixing them. Instead, in most jurisdictions, the list of failing schools doesn't change much from one year to the next, despite all manner of technical assistance, professional development, extra resources, the importing of "whole school" models, and of late, more aggressive efforts to reconstitute or outsource them (p. 43).

The quest for quality in many American public schools, especially urban schools, is somewhat elusive and confounding. Yet evident in this research, urban schools, despite considerable numbers of economically disadvantaged, English language learner, African American, and Hispanic students (Table 2), did perform at or above the standards-based measure of AYP, and teachers reported more favorable outcomes in the seven identified covariates as contexts of strong school cultures. In this research, there is very strong evidence that multiple measures of school cultures, drawn from the VISTAA questionnaire, account for differences in elementary school AYP status in greater depth and detail than end-result standards of student achievement test scores and the highly qualified status of teachers.

From my experiences in urban schools, the covariate of discourse is significantly different in schools making AYP and schools which have not. As all schools exhibit unique and differing cultures, it would seem logical that the discourse influencing culture, and being influenced by culture, would differ from one school to another. In retrospect, the semantic differentials in VISTAA concerning discourse, and for that matter commitment to collegiality, professional efficacy, and autonomy in sensemaking may not have been discriminating enough for statistically significant differences to appear; all schools have some degree of these elements in their cultures, this study was simply not able to find differences in all the elements. Yet this research does indeed begin to unpack elements of culture, identifying commitment to student learning, sensible leadership, and an efficacy related to discipline as significant covariates of culture leading to AYP.

Leading theorists and researchers identify culture, in whatever form it exists, as the crux of improvement or reform. Sun and Scott (2005) note that even perspectives "viewed as disorganized information" can become useful "knowledge when meaning is provided by the cognitive system. The cognitive system is a combination of beliefs, attitudes, opinions, and memories that govern the way meaning is provided" (p. 75). Schein (1992) advances leadership as "the attitude and motivation to examine and manage culture" (p. 374), and Argyris (1995) suggests that

a learning leader must assess the adequacy of his organization's culture, detect its dysfunctionality, and promote its transformation, first by making his own basic assumptions into learning assumptions and then by fostering such assumptions in the culture of his organization (p. 5).

Fullan (2002) is encouraging in this regard, explaining "the hard work of reculturing is the sine qua non of progress" (p. 44), yet he levels criticism at the reform agenda literature, wondering, "at the end of the book, one would be hard pressed to answer the questions, 'What do I do now, where do I start?' ... it is very difficult for even the committed reader to know what to do" (Fullan, 1996, p. 705) to reform education. The covariates and results from this research provide a platform upon which to address the

conundrum of what Sun and Scott, Schein, Argyris, and Fullan express.

The value of this research is five-fold, all of which are beneficial to individual schools and their own local control. All that is necessary is for emboldened leaders to venture into this praxis of cultural infrastructure. First, administering the VISTAA questionnaire to teachers takes no longer than 20 minutes, and anonymity can be assured by requiring only filling in a bubble on the bipolar semantic differential scale. Second, the results will indicate the current platform of culture upon which the school resides. Third, the results will show strengths upon which to build, and identify an agenda for improving areas of weakness. Fourth, these areas of weakness can become specific targets from which a principal, district administrator, or consultant could strive to build an infrastructure or a strategic plan. Also, VISTAA can be administered again to show growth over time, comparing the first set of results with the new set of cultural characterizations, statistically validating improvement in the covariates which predict the achievement of AYP.

Differences in elementary school Adequate Yearly Progress can be predicted from differences in school culture. This research finds the constructs of commitment, discourse, efficacy, and sensemaking as valid and reliable constructs of school culture; elementary schools which achieve AYP have higher ratings from teachers in covariates and composite measures of school culture than from teachers in schools failing to achieve AYP.

Current federal policy identifies four pillars upon to build a quality education: stronger accountability, local control, parent choice, and quality teaching (U.S. Department of Education, 2004). Yet “key principles underlying NCLB accountability are largely untested in education. The mechanisms through which the system is intended to work to improve student achievement and eliminate failing schools are not well understood.” (Stecher & Kirby, 2004, p. xiv). In this research, 97.4% of the teachers in the sample were highly qualified while significant differences in school performance leading to AYP remain. Attaining credentials does not insure quality results; accountability measures of test scores and highly qualified status are policies which merely skim the surface of previously uncharted factors of school quality; this research contributes a multi-faceted array of seven mechanisms for organizational assessment and improvement to that necessary, substantial body of organizational knowledge, sounding the depths of school culture through the vistas of teachers. Thus the scope for organizational characteristics and self-assessment exists in VISTAA, its contributions to school achievement hinges on each schools’ membership and courageous leaders to take heed of their current cultural dispositions and incorporate this knowledge into their practice leading to higher levels of performance--perhaps this is the kind of local control envisioned in federal policy that will empower schools to fulfill educational goals, with an end result of No Child Left Behind.

This research adds to the knowledge base of the effects and influence of school culture on Adequate Yearly Progress in elementary schools. Chenoweth (2009) contends that all schools can learn valuable lessons from high-poverty, high-minority schools which demonstrate high-performance. Weick (2001) lends insight to the intent of this research into Adequate Yearly Progress; he notes,

there is widespread agreement that social science research has done relatively little to solve social problems. Common to these assessments is the assumption that social science is best suited to generate solutions, when in fact it may be better-equipped to address how problems get defined in the first place. A shift of attention away from outcomes toward inputs is not trivial (p. 426).

Rather than the outputs of tests scores and achieving AYP, inputs of infrastructure undergird education's excursion toward Adequate Yearly Progress. Alluding to Whitman's *Ship Starting*, a school "spreading all sails" of commitment, discourse, efficacy, and sensemaking, and unfurling the "mainsail" of school culture, is able to "speed so stately" through that "unbounded sea" under the "pennant" of AYP. This research indicates that commitment, discourse, efficacy, and sensemaking are valid and reliable measures of the infrastructure of school cultures leading to Adequate Yearly Progress.

*Lo, the unbounded sea,*

*On its breast a ship starting, spreading all sails, carrying even her mainsails,*

*The pennant is flying aloft as she speeds so stately—below emulous waves press forward,*

*They surround the ship with shining curving motions and foam.* (Whitman, 1993)

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