



Center for Research in Educational Policy

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Freedom to Learn Program

## **Addendum to the Michigan 2007-2008 Evaluation Report**

Prepared for Freedom to Learn and the  
One-to-One Institute





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Center for Research in Educational Policy

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## EXECUTIVE SUMMARY

This addendum to the *Michigan 2007-2008 Freedom to Learn Evaluation Report* highlights information recently obtained in a study of 1648 teachers and principals at 65 Tennessee schools. Although this study's original purpose was to investigate hypotheses concerning the impact of discrepancies in leader-follower perceptions on desired school outcomes, its results offer not only additional "construct validity" evidence for the *Leadership Effectiveness Assessment Device (LEAD)* but also an external frame of reference that enables the responses of FTL Lead and Classroom Teachers to the *LEAD* to be better understood.

Within the Tennessee study, the eight *LEAD* scales were all shown to have desirable psychometric properties and to exhibit robust relationships with an external measure of school climate (*LEAD* total scores  $r = 0.601$ ,  $p < .001$ , for teachers; *LEAD* total scores  $r = 0.333$ ,  $p < .01$ , for principals). Further, the scores obtained on the *LEAD* appear to mirror dynamics associated with its parent model, the Competing Values Framework (CVF). In general, Tennessee leaders who showed greater "balance" in their *LEAD* profiles tended also to evidence systematically higher scores on school climate.

To provide an additional perspective on the perceptions of FTL Lead and Classroom teachers on those most responsible for leading the program's implementation at their schools, Tennessee teacher means and standard deviations were treated as "test values" and compared with those obtained in Michigan 1) for all 124 FTL respondents, 2) for the 75 FTL respondents who rated Principals and Assistant Principals, and 3) for the 49 FTL respondents who rated Other Administrators. Although systematically lower ratings on the eight *LEAD* scales were ascribed to FTL leaders when all 124 respondents were employed, statistical differences were either muted or disappeared entirely when only FTL principals and assistant principals were the targets. When statistical testing was confined to the means observed for Other Administrators, however, significant differences between Tennessee and Michigan teacher ratings not only persisted but became in some instances dramatically larger, specifically with respect to the *LEAD*'s **Director** and **Monitor** roles.

When these findings were cross referenced with correlations reported in the primary report, they indicated that as Other Administrators tended to engage more frequently in behaviors associated with

“directing” and “monitoring,” the impact on their perceived effectiveness was more robust for them than for other FTL leaders who were less disposed to engage in these roles. Although playing the “facilitator” and “innovator” roles is doubtless important for “change” initiatives like FTL, their enactment by school leaders must be “balanced” (or integrated) with the enactment of their more convergent counterparts. Without this kind of ballast, educational change initiatives frequently become mere “add-ons” to existing routines, never going completely “to scale,” and, as a result, never fully realizing their transformative potential. As Fullan (1993, p. 41) has said of educational “change forces”: “As the scale of complexity accelerates in our post-modern society our ability to synthesize polar opposites where possible, and work with their co-existence when necessary, is absolutely critical to success.”

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## INTRODUCTION

The original FTL leadership evaluation proposal contained a question involving the computation and testing of school-by-school discrepancies in *LEAD* means between Lead Teachers and Classroom Teachers. The analytic technique projected for use was the “one sample” *t*-test: a statistical procedure designed to compare a single mean value (that of the Lead Teacher in this case of FTL) against the aggregate mean value of a group (Classroom Teachers in the case of FTL). However, given the small number of FTL schools from which multiple responses were received, it was thought a better use of the data to compare FTL means against those recently obtained in state-wide study of schools in Tennessee.

Although the Tennessee study was primarily focused on relationships between the *LEAD* and a measure of school climate, it extends the FTL study in three ways:

- 1) It provides additional evidence of the “construct validity” of the *LEAD*, showing how the instrument reflects hypothesized linkages with other ideas found in the educational and management literature.
- 2) It provides an external frame of reference against which the *LEAD* scores of FTL leaders can be understood, compared, and contrasted.
- 3) It facilitates comparison of the underlying premises of the *LEAD* with those of another model of principal effectiveness that has been used by the Michigan Department of Education: the McREL “Balanced Leadership Model.”

While both the *LEAD* and the McREL models emphasize the importance of “balance” in achieving leadership effectiveness, the *LEAD* makes “balance” a pivotal part of its underlying rationale and offers empirical ways to test for its relative presence or absence.

The following addendum is divided into two primary sections: 1) a section that details the results of the Tennessee study and concerns whether the *LEAD* “measures what it purports to measure” and 2) a section in which the perceptions of 1648 Tennessee teachers regarding the leadership effectiveness of 65 Tennessee principals are employed as “norms” and statistically compared with the perceptions of 124 FTL respondents regarding those most responsible for leading the FTL implementation.

## SECTION I

### Results on the *LEAD* in Tennessee schools

In a recent pilot test of the *LEAD*, Fee (2008, July) administered both that instrument and a 35-item school climate measure to some 1648 teachers and 63 principals at 65 different Tennessee schools statewide. In this pilot study, Fee was primarily concerned with three questions:

- 1) *To what extent do the eight LEAD scales exhibit desirable psychometric properties?*
- 2) *To what extent are the LEAD and its constituent eight scales positively associated with school climate considered as a proxy for effectiveness?*
- 3) *Do discrepancies in leader/follower perceptions of the leader's skills as measured by the LEAD negatively affect school climate, as hypothesized in the literature?*

Although not part of the original study, a fourth question concerned the interrelationships of the different *LEAD* roles, as outlined in the literature on the "Competing Values Framework."

- 4) *To what extent is a "balanced" or "integrated" or "more complex" repertoire of leadership skills as measured by the LEAD roles associated with positive school climate?*

#### *Question 1: Findings*

Regarding Question 1, the eight constituent *LEAD* scales were shown to have desirable psychometric properties, given the original purpose of the instrument. As summarized in Table 1, all eight *LEAD* scales exhibited high internal consistency reliability, all at levels at or above  $\alpha = .90$ . Additionally, all eight *LEAD* scales appeared to measure a single underlying construct. When principal components analysis was applied, the eight items constituting each of the eight *LEAD* scales could not be "rotated" or decomposed into smaller units unless a different solution was "forced" on the data. Likewise summarized in Table 1, these eight one-component solutions explained each between 61% and 68% of the variance in item responses.

**Table 1**

**Scale Reliabilities and Percent of Variance Explained for Eight LEAD Scales**

<i>LEAD</i> Scale	<i>Coefficient</i> <i>Alpha</i>	% of Variance Explained
Producer	0.91	62.4
Director	0.93	67.0
Coordinator	0.92	64.7
Monitor	0.91	61.0
Facilitator	0.93	68.1
Mentor	0.91	61.1
Innovator	0.92	63.9
Broker	0.92	64.7

*Question 2: Findings*

With respect to Question 2, all eight of the *LEAD* scales as well as a “total” *LEAD* score were for Tennessee teachers significantly correlated with a widely-accepted measure of school climate, a shortened form of the *School-Level Environment Questionnaire (SLEQ)*. Informed by the work of R. H. Moos (1979) on educational environments, the *SLEQ* was originally developed as a 54-item measure by the Australians Fisher and Fraser (1990; see also Creswell & Fisher, 1999). Using a combination of exploratory and confirmative factor analysis techniques, Johnson and Stevens (2001, 2006; also Johnson, Stevens, & Zvoch, 2007) later revised and shortened the *SLEQ* to 35 items which then measured five constructs:

- 1) *Affiliation*. The extent to which teachers can obtain assistance, advice, and encouragement and are made to feel accepted by colleagues.
- 2) *Innovation*. The extent to which the school is in favor of planned change and experimentation, and fosters classroom openness and individualism.
- 3) *Participatory Decision-Making*. The extent to which teachers have the opportunity to contribute to school decision making.
- 4) *Resource Adequacy*. The extent to which support personnel, facilities, finance, equipment, and other resources are suitable and adequate.
- 5) *Student Support*. The extent to which there is good rapport between teachers and students, and students behave in a responsible, self-disciplined manner.

Among teachers, significant, positive relationships were observed between aggregate scores on the revised *SLEQ* and individual scale and total scores on the *LEAD*. With the strongest correlations observed between the overall score on the revised *SLEQ* and the **Facilitator** ( $r = 0.610, p < .001$ ), **Innovator** ( $r = 0.605, p < .001$ ), **Mentor** ( $r = 0.591, p < .001$ ), and **Coordinator** roles ( $r = 0.575, p < .001$ ), the relationship between the overall *LEAD* and overall school climate slightly exceeded 0.6. ( $r = 0.601, p < .001$ ).

For the principals in the study, significant, positive relationships between leadership and school climate were also observed but neither as systematically nor as strongly as for teachers. Among principals, the correlation between overall *LEAD* scores and *SLEQ* scores was rather modest ( $r = 0.333, p < .01$ ), with the strongest relationships seen between the *SLEQ* and the **Director** ( $r = 0.320, p < .01$ ), **Facilitator** ( $r = 0.317, p < .05$ ), and **Innovator** roles ( $r = 0.314, p < .05$ ). About equal in magnitude (approximately  $r = 0.29, p < .05$ ), statistically significant correlations were also observed for principals between school climate and the *LEAD*'s **Coordinator**, **Mentor**, and **Broker** roles. Albeit positive, no statistically significant correlations were observed between principals' self-rating on the **Producer** and **Monitor** roles and their perceptions of school climate, however. For teachers and principals, respectively, the overall correlations between overall *LEAD* and revised *SLEQ* scores are presented in Figure 1 below.

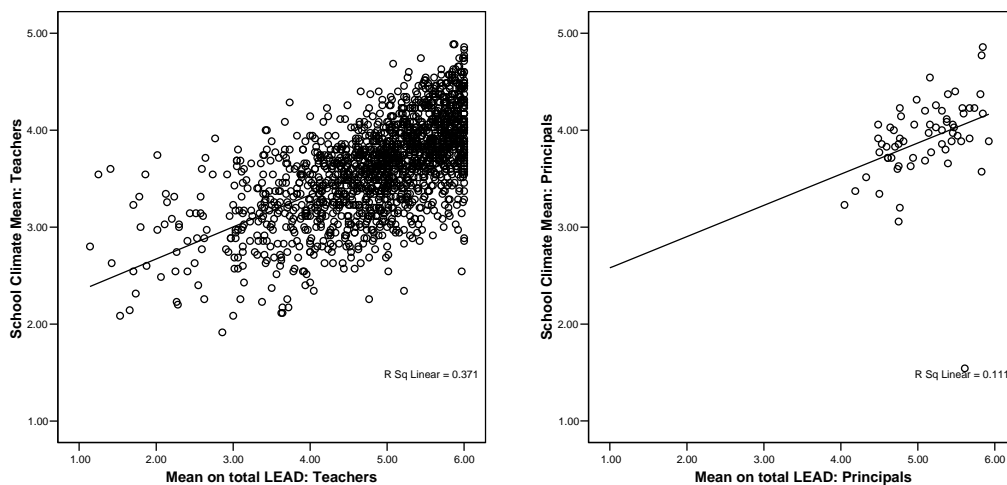


Figure 1. Scatterplots of mean scores on the *LEAD* graphed against mean scores on the revised *SLEQ* for 1648 teachers and 63 principals.

### Question 3: Findings

The statistically significant disconnect discovered between teachers' sense of the relationship between school leadership and school climate and that of principals' (tested at  $Z = 2.65$ ,  $p < .01$ ) provided an entrée into the results concerning discrepant perceptions of leaders by their followers. Although several variables have been suggested as to the reasons underlying such discrepancies, there is generally strong agreement that when such discrepancies exist—be they positive or negative—desired organizational outcomes suffer (see, for example, Atwater, Ostroff, Yammarino, & Fleenor, 1998; Becker, Ayman, & Korabik, 2002). With the desired organizational outcome represented in this study as overall school climate, both signed and unsigned (absolute value) “discrepancy” scores derived from *LEAD* data appear generally to resonate with the discrepancy hypothesis.

To answer Question 3, teachers' scale and total scores on the *LEAD* and their scores on overall school climate were averaged by school and subsequently merged on a school code number with the corresponding scores of their principals. Where there were either no corresponding scores between faculty and their principals (or vice versa), or the number of teachers contributing to the average school *LEAD* and *SLEQ* scores was deemed insufficient (that is, less than 50% of the known faculty size), those schools were discarded.

For the remaining 61 schools with complete data, both signed and unsigned discrepancies on the *LEAD* were computed by subtracting the school principal mean from the corresponding faculty mean. In turn these values were correlated with the corresponding values for 1) faculty-assessed school climate and 2) principal-assessed school climate.

For signed and unsigned discrepancy values correlated with *faculties'* overall scores on the revised *SLEQ* and the total *LEAD*, the correlations were  $r = -0.495$ ,  $p < .001$ , and  $r = -0.365$ ,  $p < .01$ , respectively. For signed and unsigned discrepancy values correlated with *principals'* overall score on the revised *SLEQ* and the total *LEAD*, the correlations were  $r = -0.097$ ,  $p = .457$ , and  $r = -0.377$ ,  $p < .01$ , respectively. Along with a complete table of *LEAD* and *SLEQ* inter-correlations (Table 2), plots of the relationships between signed and unsigned discrepancy values and teachers' mean school climate scores are provided in Figure 2 below.

Table 2

*Pearson Correlations Observed between Signed and Unsigned Discrepancy Scores on Faculty-Assessed School Climate and Principal-Assessed School Climate*

	Producer	Director	Coordinator	Monitor	Facilitator	Mentor	Innovator	Broker	LEAD
Faculty Climate (signed)	-0.505 ***	-0.427 ***	-0.540 ***	-0.368 **	-0.549 ***	-0.444 ***	-0.421 ***	-0.422 ***	-0.495 ***
Faculty Climate (unsigned)	-0.243	-0.262 *	-0.493 ***	-0.239	-0.521 ***	-0.329 **	-0.466 ***	-0.033	-0.365 **
Principal Climate (signed)	-0.125	-0.118	-0.134	-0.073	-0.054	-0.086	-0.057	-0.069	-0.097
Principal Climate (unsigned)	-0.320 *	-0.489 ***	-0.417 ***	-0.332 **	-0.275 *	-0.339 **	-0.291 *	-0.199	-0.377 **

\*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

With respect to signed discrepancy values, all eight *LEAD* scale scores were observed to be significantly negatively correlated with *faculty-assessed* school climate. With respect to unsigned or absolute values, however, only five of the *LEAD* roles—the **Director** ( $r = -0.262, p < .05$ ), **Coordinator** ( $r = -0.493, p < .001$ ), **Facilitator** ( $r = -0.521, p < .001$ ), **Mentor** ( $r = -0.329, p < .05$ ), and **Innovator** ( $r = -0.466, p < .001$ ) roles—evidenced significantly negative correlations with faculty-assessed school climate.

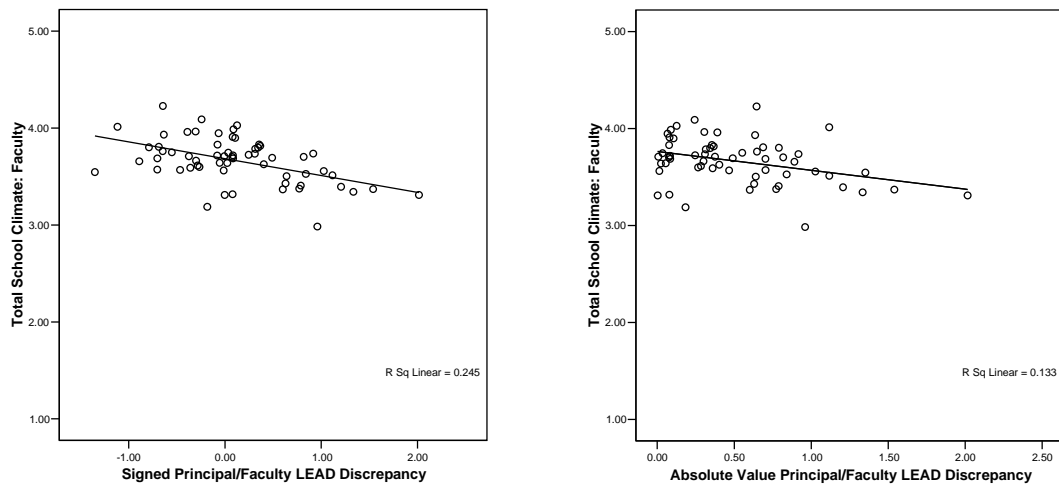


Figure 2. Plots of signed and unsigned *LEAD* discrepancy scores graphed against faculty-assessed overall mean scores on the revised *SLEQ*

With respect to signed discrepancy values, none of the *LEAD* roles were observed to be significantly negatively correlated with *principal-assessed* means on school climate. With respect to unsigned or absolute values, however, all but the *LEAD*'s **Broker** role evidenced significantly negative correlations with school climate.

#### *Question 4: Rationale*

More than just a static picture of leadership effectiveness, the “Competing Values Framework” is also a dynamic model which asserts that more capable leaders not only know and possess a wider repertoire of skills but also contingently deploy those skills in an “integrated” or “balanced” way. Much the same point of view underwrites the McREL “Balanced Leadership Framework,” a model which shares some of the *LEAD*'s strengths. As tools for principal professional development, both the *LEAD* and the McREL “Balanced Leadership Framework” reflect pedagogically-sound principles grounded in cognitive psychology. In so doing, they represent significant improvements over the often ill-structured, lengthy, and difficult-to-measure array of most statements of principal performance “standards.”

#### *Common strengths of the McREL and LEAD models*

Like the intent of the McREL “Balanced Leadership Framework,” that of the *LEAD* is to provide principals with a “cognitive map” of behaviors that better enables them to channel their skills and energies and, as a result, to make the achievement of desired school outcomes more likely. What Hammerness, Darling-Hammond, and Bransford (2005) have recently said of *Preparing Teachers for a Changing World* applies also to the preparation and professional development of school leaders:

*Research suggests that when learners begin with a sense of the whole and are helped to see how ideas are connected and related, it deepens their understanding and allows them to integrate and use more of what they learn. Studies of memory and learning have found that students learn best when they have a **conceptual framework**, a **cognitive map**, or a **schema**, which enables them to organize categories of information and to recognize the relationship among concepts (Singley and Anderson, 1989), something that is much more difficult when they encounter an unrelated set of facts or a decontextualized introduction to discrete skills. Learners benefit from encountering a curriculum that is organized around the structure of a subject—the fundamental ideas, concepts, and issues of a field—noting that, as Bruner has argued, “to learn structure, in short, is to learn how things are related (1960/1977, p. 7). Learning ideas within the context of an overarching conceptual framework not only helps students understand “the big picture” but also enables them to begin to recognize how all the individual ideas and theories fit together and relate to one another. (p. 397)*

Grounded in “cognitive maps,” both the McREL and *LEAD* frameworks offer benefits to aspiring and practicing school leaders that do not generally accrue to simple, if well-meaning, statements of “standards,” the structure of which are seldom if ever so grounded. Moreover, the often -imposing length of such standards statements tends to limit their usefulness, as such statements do not reckon with the allied notion of *cognitive load*.

Consistent with the pioneering work on cognitive limits by George Miller (1956) regarding “the magic number seven, plus or minus two,” both the McREL and *LEAD* models attempt to “chunk” a myriad of desirable behaviors into a relatively small set of governing ideas. In the McREL Framework, these governing ideas are leadership, focus, magnitude of change, and purposeful community. Within the *LEAD*, the concern is with four “quadrants” or theories of effectiveness (Rational Goal, Internal Process, Human Relations, and Open Systems) that are in turn expressed through eight individual roles (Producer, Director, Coordinator, Monitor, Facilitator, Mentor, Innovator, and Broker) or, taken in combination, four leadership “archetypes”: the Taskmaster (Rational Goal), the Analyzer (Internal Process), the Motivator (Human Relations), and the Visionary (Open Systems).

Apart from their better alignment with what is currently known about learning, the final and perhaps most critical advantage of frameworks like McREL’s or CREP’s is their action-orientation. Unlike those standards statements that admonish school leaders “to have a shared vision” or “exercise presence,” both McREL’s “Balanced Leadership Framework” and CREP’s usage of the “Competing Values Framework” posit a repertoire of *very specific actions* (see Marzano, Waters, & McNulty, 2005, p. 41) that are couched in *jargon-free language*. Thus stated, what emerges benefits not only practitioners and researcher consumers, but also scholars and research producers as such actions are more amenable to direct observation and more capable of consistent, accurate measurement.

#### *Signature Differences between and the McREL and LEAD models*

Absent similarity of intent and commonality of strengths, there are, however, major differences in philosophy and approach that distinguish the McREL and *LEAD* frameworks. In the vein of most “mainstream” thinking about educational leadership, McREL tacitly treats the phenomenon as something apart from leadership more generally (for a more trenchant critique of the regnant perspective and its entailments, see Hess 2004, 2006, and Hess & Kelley, 2005); With little else to build upon save

correlations with student achievement, McREL researchers pursue a largely *empirico-inductive* or "bottom-up" approach to inquiry: a "model of the learner" that Bruner (1985) once referred to as *tabula rasa*. Building up their framework out of the "21 responsibilities" observed by Marzano, Waters, and McNulty (2005), McREL researchers subsequently attach to it "the notion of balanced leadership as the concept emerged from the observations of McREL's research team as they reflected on the research findings through the lens of decades of combined experience working with and in schools" (Waters and Cameron, 2007, p. 18). With regard to Bruner's (1985) description of the *tabula rasa* learner, the description is most telling for, as Bruner has noted, "the formula for success in empiricism is to have experience" (p. 6).

However, more aligned with the thought of most other education professionals—like educational psychologists and philosophers, for example—the tacit assumption underlying the *LEAD* is that educational leadership involves principles and perspectives derived from other social science disciplines, which simply require *application* to educational settings. Pursuing a *hypothetico-deductive logic of inquiry* or "top-down" approach, thus does the *LEAD* place at its center arguably the most "comprehensive" (see, for example, Hunt, 2004, p. 34) and putatively most "promising" (see, for example, Day, Harris, Hadfield, Tolley, & Beresford, 2000, p. 168; Witizers, Boskers, and Kruger, 2003, p. 416 ) model of leadership effectiveness apropos schools and to it subsequently attaches specific salutary behaviors of principals. As contrasted Bruner's (1985) aforementioned *tabula rasa* model of the learner, this model approximates one that he called the *hypothesis generator* whose "formula for success in learning . . . is to have a good theory" (p. 6).

In the particular case of the *LEAD* and its underlying "Competing Values Framework," thus there is no need to have the notion of balance "emerge" from our "reflections" on our "combined experiences" as Waters and Cameron (2007) have claimed with respect to the McREL "Balanced Leadership Framework." As it is with other prominent leader/manger effectiveness models in most schools of management, rather are such notions as "balance," "complexity" and "paradox" in Quinn's "Competing Values Framework" intrinsic to the "theory" itself, flowing from it as "hypotheses."

Because a central claim behind the *LEAD* is that it evokes the "Competing Values Framework," then evidence must be provided that it "measures what it purports to measure" and that "balance,"

“integration,” and “complexity” are elements of what it assesses. Hence, the need to add and respond to  
Question 4: *To what extent is a “balanced,” “integrated,” or “more complex” repertoire of leadership skills as measured by the LEAD roles associated with positive school climate?*

#### *Question 4: Findings*

Because concepts such as “balance,” “complexity,” and “paradox” are better thought of being more curvilinear in nature (graphed as a parabola) than linear (graphed as a straight line), Quinn (2004) and others (Quinn, Spreitzer, & Hart, 1992) have at various times proposed alternatives to the well-known Likert-type approach to measuring these concepts. However, because these alternative kinds of rating scales are unfamiliar to most people, the decision was made to use the more traditional Likert-type variety in the *LEAD* and subsequently to employ a two-part approach to analyzing the data collected.

##### *Categorical approach*

One approach to getting a leader’s “complexity” is simply to find an index of central tendency for the respondents on each of the four quadrants of the “framework”—1) Rational Goal (“Taskmaster” leader archetype), 2) Internal Process (“Analyzer” leader archetype), 3) Human Relations (“Motivator” leader archetype) and 4) Open Systems (“Visionary” leader archetype)—and then to obtain the frequency with which the leader scores at or above that index. Thus, leaders with sums of 4 or 3 may be considered as being “complex or largely complex,” while those with lower scores of (2, 1, or 0) may be considered as being “simple or very simple.”

Using faculty ratings aggregated to the school level and computing such a “complexity” score classified about 44.6% of the Tennessee school principals as “complex or largely complex” and the remaining 55.4% as being “simple or very simple.” An independent *t*-test of the group means on teachers’ ratings of school climate not only indicated a highly significant difference between “complex” ( $M = 3.83$ ,  $SD = 0.158$ ) and “non-complex” ( $M = 3.53$ ,  $SD = 0.181$ ) leaders ( $t(63) = 7.08$ ,  $p < .001$ ) but also pointed to a very large effect on teacher perceptions of school climate ( $d = 1.74$ ). Perhaps because of the much weaker connections that Tennessee principals drew between their behaviors and climate, of the roughly 39.7% of principals classified as “complex” ( $M = 4.00$ ,  $SD = .593$ ) and the remaining 60.3% ( $M = 3.84$ ,  $SD = .353$ ) categorized as “simple,” neither an independent *t*-test of the overall school climate means ( $t(61) = 1.38$ ,  $p = .171$ ) nor a multivariate test of the five item scales constituting the climate instrument ( $F(5, 57) =$

1.10,  $p = .372$ ) indicated a statistically significant difference between “complex” and “simple.” Even so, every one of the climate means tested—both overall and constituent—favored the “complex” principal group, and two of the five constituent climate means—specifically, “participatory decision making” ( $F(1, 61) = 2.85, p = .097$ ) and “resource adequacy” ( $F(1, 61) = 3.35, p = .072$ )—did, in fact, approach significance at liberal alpha levels.

#### *Distance approach*

A second approach to measuring the level of “balance,” integration,” or “synergy” evidenced by the leader involves measuring the difference in absolute value between his or her scores in *opposing quadrants*—(1) Rational Goal (“Taskmaster” leader archetype) versus Human Resources (“Analyzer” leader archetype) and (2) Internal Process (“Analyzer” leader archetype) versus Open Systems (“Visionary” leader archetype). Smaller values on the first *LEAD* diagonal should be associated with better effectiveness outcomes; herein, the leader is assumed to be engaging in some mix of four “integrative practices”: “Authentic Engagement” and/or “Tough Love” (Taskmaster in foreground, Motivator in background), “Reflective Action” and/or “Responsible Freedom” (Motivator in foreground, Taskmaster in background). Likewise, on the second *LEAD* diagonal, smaller values should be associated with better effectiveness outcomes, but with respect to a different set of four “integrative practices”: “Adaptive Confidence” and/or “Grounded Vision” (Analyzer in foreground, Visionary in background), “Detached Interdependence” and/or “Appreciative Inquiry” (Visionary in foreground, Analyzer in background).

To determine whether these relationships obtain, “integration” scores were obtained for faculty respondents on the first diagonal ( $M = 0.316, SD = 0.153$ ) and the second diagonal ( $M = 0.253, SD = 0.101$ ) and these scores correlated with the overall faculty climate score at the 65 schools from which data were available. As seen in the scatterplots following, both sets of scores were indeed inversely correlated with higher school climate scores. In other words, as the discrepancy between the leader’s opposing quadrant scores diminish (denoting higher ‘integration’), school climate tends to increase.

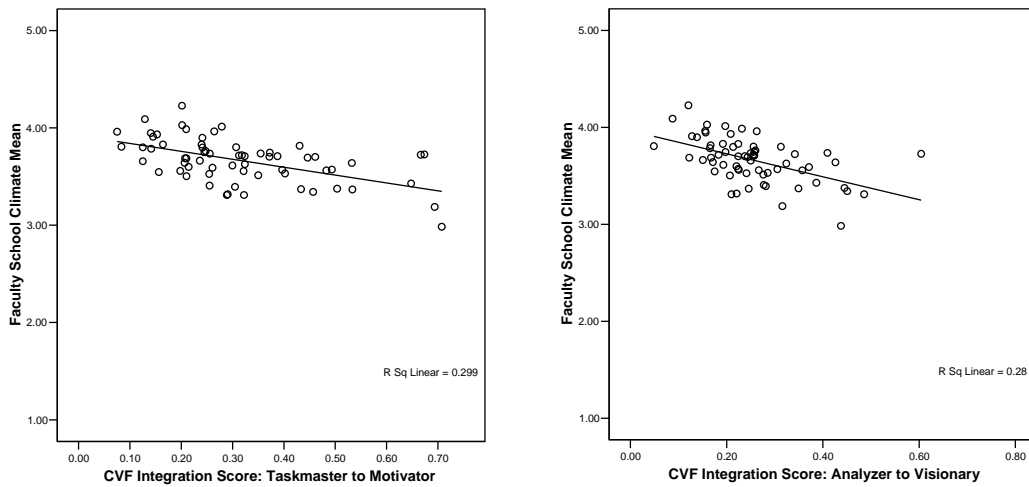


Figure 3. Scatterplots of quadrant integration scores against faculty-assessed overall mean scores on the revised SLEQ

With respect to Taskmaster/Motivator integration, a shorter between-quadrant diagonal did indeed prove to be negatively correlated with better school climate: a relationship that held true whether the unit of analysis was the faculty at 65 schools ( $r = -0.55, p < .001$ ) or 1628 individual teachers ( $r = -0.34, p < .001$ ). Results for Analyzer/Visionary integration were similar to those found previously: a shorter diagonal was observed with respect to better school climate for both 65 faculties ( $r = -0.53, p < .001$ ) and the 1628 teachers nested within the institutions ( $r = -0.27, p < .001$ ). Again, however, because of the weaker relationships between principal self-ratings and their perceptions of the quality of school climate, no statistically significant relationships were found between their integration scores and climate either on diagonal one ( $r = 0.11, p = .426$ ) or diagonal two ( $r = -0.14, p = .292$ ). The best that can be said of these results is that at least one of the two diagonals correlated in the expected direction.

## SECTION II

### Comparison of Tennessee “Norms” with FTL Respondents’ Perceptions of Principals/Assistant Principals and Other Administrators

Unlike the Michigan leaders rated in the FTL study, the 65 principals whose effectiveness was rated in Tennessee were not known to be involved in a “change” initiative. Nevertheless, given the sizable number of targets rated and the breadth of the sampling in both states, comparison of the two sets of leaders seemed an interesting and useful way to address some questions about discrepant perceptions among FTL Lead and Classroom teachers that were not answered because of sampling limitations. As was pointed out in the primary report, although data were obtained from 61 different FTL schools, only one respondent accessed the FTL questionnaire at about half of these schools (49.1%) and only two respondents accessed the questionnaire at 13 additional schools (21.3%). At the remaining 18 schools (29.5%), the number of respondents varied between as few as three and as many as 25, with the median number being five respondents.

Because, in most cases, the projected “within group” comparisons outlined in the original proposal did not seem practical, it was thought a better use of the data to make “between-group” comparisons, employing the sample recently obtained in Tennessee. Hence, across all 1648 Tennessee teachers who responded to the *LEAD*, means were computed for each of the eight constituent *LEAD* scales and plotted on an octagonal “radar” graph representing the “Competing Values Framework.” In turn, these eight means were used as “test values” against which the means of FTL teachers were compared using one-sample *t*-tests. Because the target being rated proved to be a significant source of difference in the FTL data, means were also computed for the 75 FTL Principals/Assistant Principals and 49 FTL Other Administrators whose leadership behaviors were rated by FTL teachers. In their turn, all three sets of FTL means were plotted on a Competing Values “radar graph” to provide visual points of comparison.

As Table 2 reveals and Figure 3 suggests, systematic differences were observed between FTL and Tennessee teachers on all eight leadership roles. Closer inspection of the Table shows not-inconsiderable effect sizes especially for the **Director** ( $t(123) = -6.69, p < .001, d = 0.59$ ), **Monitor** ( $t(123) = -5.55, p < .001, d = -0.49$ ), and **Mentor** roles ( $t(123) = -4.79, p < .001, d = -0.43$ ). On the other hand,

observed differences in the means of the Tennessee and FTL teachers on the **Coordinator** ( $t(123) = -2.52, p < .05, d = -.22$ ) and **Facilitator** ( $t(123) = -2.38, p < .05, d = -.21$ ) roles were much smaller and the effect sizes associated with such differences much less robust.

Additional breakouts of the FTL data by Principals/Assistant Principals and Other Administrators suggest that a significant part of the difference in Tennessee and Michigan means owes to FTL respondents' assessment of the leadership of "Other Administrators." When the *LEAD* means of only FTL Principals/Assistant Principals were analyzed, not only did the means on the aforementioned roles of **Coordinator** ( $t(123) = -1.64, d = -0.19$ ) and **Facilitator** ( $t(123) = -0.61, d = -0.07$ ) become statistically and substantively non-significant, so did the Principal/Assistant Principal means on two other roles: namely, the **Producer** role ( $t(123) = -1.41, d = -0.16$ ) and the **Broker** role ( $t(123) = -0.259, d = -0.03$ ). Although the mean on the **Facilitator** role also became statistically non-significant when only the ratings of Other Administrators of FTL were considered ( $t(123) = -1.95, d = 0.27$ ), yet even that distinction proves the rule, as the effect size associated with that difference for all 124 leaders ( $d = 0.27$ ) was observed actually to increase. Indeed, these increases in the effect sizes associated with the mean differences for FTL and Tennessee teachers were for, FTL Other Administrators, in all cases systematic, and in some cases dramatic--especially for the **Director** (difference of  $-0.31$ , from  $d = -0.59$  to  $d = -0.91$ ), **Monitor** (difference of  $-0.27$ , from  $d = -0.49$  to  $d = -0.76$ ), and **Broker** roles (difference of  $-0.28$ , from  $d = -0.23$  to  $d = -0.51$ ).

Table 3

Means, Standard Deviations, One Sample t-test Comparisons, and Effect Sizes for Tennessee (TN) and FTL (MI) Teachers Who Were Administered the LEAD

Scale	M (TN)	All Respondents (N = 124)				Principals/Assistant Principals (n = 75)				Other Administrators (n = 49)			
		M (MI)	SD (MI)	t	d	M (MI)	SD (MI)	t	d	M (MI)	SD (MI)	t	d
Producer	<b>4.97</b>	4.74	0.77	-3.22**	-0.29	4.86	0.69	-1.41	-0.16	4.57	0.86	-3.20**	-0.44
Director	<b>5.08</b>	4.54	0.90	-6.69***	-0.59	4.78	0.77	-3.43***	-0.39	4.19	0.96	-6.51***	-0.91
Coordinator	<b>4.95</b>	4.76	0.87	-2.52*	-0.22	4.80	0.84	-1.64	-0.19	4.70	0.92	-1.95	-0.27
Monitor	<b>4.87</b>	4.38	0.98	-5.55***	-0.49	4.61	0.85	-2.67**	-0.30	4.04	1.07	-5.47***	-0.76
Facilitator	<b>4.80</b>	4.62	0.86	-2.38*	-0.21	4.75	0.78	-0.61	-0.07	4.42	0.94	-2.82**	-0.39
Mentor	<b>4.77</b>	4.38	0.91	-4.79***	-0.43	4.49	0.85	-2.81**	-0.32	4.20	0.97	-4.08***	-0.57
Innovator	<b>4.94</b>	4.64	0.93	-3.61***	-0.32	4.73	0.92	-2.01*	-0.23	4.51	0.93	-3.26**	-0.45
Broker	<b>4.88</b>	4.70	0.79	-2.54*	-0.23	4.86	0.74	-0.259	-0.03	4.46	0.82	-3.64**	-0.51



Figure 4. Radar graphs of the eight LEAD scale means, comparing Tennessee teachers to all FTL teachers (top left), FTL teachers rating 75 FTL Principals/Assistant Principals (bottom center), and FTL teachers rating 49 other administrators (top right).

## IMPLICATIONS

The results of comparing the responses of FTL participants with those of Tennessee teachers provide another way of thinking about the results pertinent to questions six and seven described in the primary report. Using a one-within, two-between “mixed” MANOVA design, the results for question six suggested that the key issue in assessing FTL implementation effectiveness had less to do with the type of FTL “rater” than with the type of FTL “target” being rated; and that that group of targets deemed “Other Administrators” tended not to enact as effectively as the group of FTL “Principals/Assistant Principals” three important leadership roles: the **Director**, the **Monitor**, and the **Broker**.

To a degree, these findings also carried over with respect to question seven concerning correlations between perceived implementation effectiveness and the scores on eight *LEAD* scales. For the overall sample of 124, the lowest correlations between implementation effectiveness and the *LEAD* scales was consistently observed for the **Director** ( $\rho = 0.25$ ) and **Monitor** ( $\rho = 0.31$ ) roles. Interestingly, however, when the scores of Other Administrators were examined separately, the correlations between implementation effectiveness and *LEAD* scores increased substantially with respect to playing the **Director** ( $\rho = 0.32$ ) role and dramatically with respect to playing the **Monitor** ( $\rho = 0.49$ ) role. In sum, although “Other Administrators” as a group may not have “directed,” “monitored,” and, to some extent, “brokered” as often or as well as Principals and Assistant Principal—a result that perhaps owes to their relative lack of “position power” at the school—they tended nevertheless to be perceived as much more effective in implementing FTL just to the extent that they *were* invested in such roles and enacted behaviors linked to them.

As findings in the primary document suggest, change initiatives like FTL seem to require that leaders err on the side of “facilitating” teacher interaction, promoting collegial learning, and serving as a constant goad to “innovation.” By the same token, as both the McREL and LEAD models suggest, these two fore-grounded roles must be *balanced* against the need 1) to focus innovation so that what takes place occurs within the context of a set of broader school goals and 2) to domesticate innovation so that the change spreads outwards to other teachers who may be less directly involved and perhaps less comfortable with the change. Without this kind of leadership ballast, educational change initiatives all too frequently end up becoming mere “add-ons” to existing routines, never going completely “to scale,” and,

as a result, never fully realizing their transformative potential. As Fullan (1993, p. 41) has said of educational “change forces”: “As the scale of complexity accelerates in our post-modern society our ability to synthesize polar opposites where possible, and work with their co-existence when necessary, is absolutely critical to success.”

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