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Title: **Improving Principal Leadership Through Feedback and Coaching**

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Abstract Body.

Background / Context:
School leadership and a culture of trust are widely recognized as important in promoting in-school processes and conditions that support and increase student learning and achievement (Louis et al., 2010; Robinson et al., 2008; Supovitz et al., 2009, Bryk et al, 2010). A meta-analysis of 70 studies found effect sizes ranging from 0.16 to 0.33 between teacher perception of school leadership and student achievement (Waters et al., 2003). Robinson et al. (2008) analyzed 22 studies and concluded the average effect of instructional leadership is three to four times greater (effect size of 0.44) than the effect of transformational leadership on student outcomes. Recent empirical work has supported the connections between school leadership, teacher practices, and improved student outcomes (e.g., Day, et al. 2009;, Heck and Hallinger 2010; Goddard, et al., 2010; May and Supovitz, 2011; Sammons, et al., 2010; Supovitz, Sirinides, and May, 2010). These studies show consistently positive associations between leadership and student outcomes across a variety of organizational (e.g., elementary, middle, and high schools; public, private, and charter), regional (e.g., urban/suburban), and, temporal contexts (1980 through present).

Although the strengths portrayed by these studies are consistent, so too are the weaknesses. The extant published empirical work on leadership effects is exclusively (a) correlational, (b) primarily cross-sectional, and (c) non-interventional. Positive findings from correlational studies provide a persuasive promise, while the lack of rigorous causal leadership studies provides a compelling need for rigorous evaluations. This study examined a feedback in a randomized design and a coaching intervention combined with feedback in a non-randomized design.

Purpose / Objective / Research Question / Focus of Study: The purpose of this study is to evaluate the efficacy of a feedback and coaching intervention designed to improve the quality of principal leadership. Principals received feedback from teachers on their instructional leadership, and their teachers' trust of them. Principals also provided self-ratings and they compared their teachers' ratings to their own self -ratings. In the first part of the study they received feedback reports of these data. In the second part they worked with trained coaches on how to use and integrate that information into their educational practice. We predicted that this intervention would improve principals' leadership, trust, and, ultimately, enhance student achievement. (Student achievement was not evaluated in this project). The first hypothesis about feedback was tested in a longitudinal randomized design and the second concerning the addition of coaching in a pre-post design where principals received feedback only in the first year and feedback and coaching in the second year.

Feedback for Improving Leadership. Multi-source feedback typically entails a leader's self-assessment as well as assessments from subordinates, peers, and/or superiors. This type of feedback provides information about leadership efficacy that resides within the shared experiences of these individuals rather than from any single source (Atwater, 1998). Research in the private sector supports the use of subordinate feedback to facilitate communication (Tornow, London & CCL Associates, 1998), provide unique perspectives (Church, 1997), and serve as a reliable source of useful information (Smither et al., 2005). Numerous studies, outside of education, have reported improved leadership and increased leader self-awareness (e.g., Hesketh et al., 2005; Reilly et al., 1996) and overall improved performance (Kluger & DeNisi, 1996; Walker & Smither, 1999) following feedback from subordinates.

Coaching for Improving Leadership. Feedback alone, without supports for implementing the feedback, may fail to improve leadership for several reasons. First, individuals are often self-enhancing and self-protective (Alicke & Sedikides, 2009) and tend to "accept feedback from others that is consistent with the way we see ourselves and to reject feedback that is inconsistent with the way we see ourselves" (Goldsmith, 2004, p.7). By denying the validity of the feedback, people relieve themselves of the responsibility to respond to it. Second, persons often struggle with interpreting feedback and drawing valid conclusions (Cannon & Witherspoon, 2005). Our theoretical model indicated that if the principal did not accept the validity of the measures or feedback, then it would be unlikely that positive change would occur.

The combination of feedback and coaching has become one of the fastest growing executive development strategies in global companies (American Management Association, 2008; Luthans & Peterson, 2004). Business organizations frequently hire coaches to help managers work through the natural barriers to using feedback productively, assisting in interpreting and internalizing the feedback as well as setting specific goals for change (McDowall, 2008; Jarvis & Fillery-Travis, 2006). Existing research in business suggests that coaching has positive results (Kombarakaran et al., 2008; Bowles et al., 2007). For example, Thatch (2002) found that the combination of feedback and coaching increased leadership effectiveness up to 60 percent.

These positive results suggest the value of testing a process of feedback and coaching in educational settings designed to improve principal leadership. Coaching for school principals is becoming a more popular approach to leadership development

Setting:
The experiment was implemented in a large urban school district in the Southeastern United States. All principals serving in the 108 regular, elementary or middle schools the school system at the start of the study were eligible to participate. High schools and schools for select student populations (e.g., alternative schools, special education) were excluded because of the unique nature of leadership in these contexts.

Population / Participants / Subjects:
Of the 108 schools that were eligible to participate, 76 consented to participate and were randomly assigned to the treatment (feedback) or control (no feedback) group. Overall, principals had been leaders at their current school on average 2.4 years. They had been principals in the same school district on average 5.6 years. Teachers had been teaching in their current school for an average 1.6 years and with their principals for an average 1.1 years. The average percentage of students in the free/reduced lunch program was 68%. Overall, 88% and 85% of students were proficient or advanced on their standardized tests in reading and math, respectively

Intervention / Program / Practice:

The first phase of the research was feedback only. Beginning in the spring of 2008, all treatment and control teachers responded to a detailed survey regarding the principals' learning-centered leadership, and the levels of trust between principals and teachers. Two to three weeks after the survey was administered, treatment principals received a detailed feedback report, while the control group received no feedback. This procedure of survey and feedback reports for the treatment group and survey only for the control was repeated a total of 4 times in the first phase of the study: spring 08, fall 09, winter 09 and spring 09. Feedback was presented in reports that included a narrative as well as graphs of the results of teacher and principal survey responses for

each wave of data. Reports presented data for the results of each wave (time), as well as longitudinally based on the waves of accumulated data from prior survey administrations. Finally, data on all schools in the sample were averaged so that principals could compare their results to those of other participating schools (not just schools in the feedback group).

In the second phase of the research coaching was implemented to help principals understand and use their feedback data. Our coaching model prescribes a progression of foci and activities to be implemented over five phases that unfold across up to 15 sessions in a year. Coaches scheduled sessions with their principals, typically in the principal's office, with automated meeting reminders emailed to coaches and principals. Meetings lasted between 45-90 minutes, with longer sessions generally immediately following a feedback report and shorter sessions in between feedback reports. Rather than following a specific set of procedures or protocols for each session, the focus in our model is on developing principals' knowledge and skills in the service of developing instructional leadership behaviors and achieving outcomes. This is achieved by building a developmental relationship, listening, questioning, assessing, feedback giving, confronting, motivating, goal setting, action planning, establishing accountability, and supporting. The specific phases of the coaching model are: 1) Groundwork involves setting the stage for an effective coaching engagement; (2) Assessment and feedback help principals get clear pictures of themselves as educational leaders. Coaches ask questions to assess what principals learn from their feedback and explore its meaning and implications;. (3) Goal setting is the process of moving from an informed perspective to having a specific, measurable objective. The responsibility of the coach is to assist the principal in selecting a meaningful target for change and designing and committing to a goal or set of goals; (4) Action planning involves designing clear, concrete, and specific steps that, if followed, will lead to goal attainment; and (5) Ongoing assessment and support involve measuring progress over time, addressing challenges that emerge, providing support to build motivation, and keeping the principal on track.

Research Design:

Study I, with feedback only, was a randomized cluster design with randomization occurring at the school level. Study II, which was feedback plus coaching was implemented, used a quasi-experimental pre-post design. .

Data Collection and Analysis:

Feedback Alone. We tested the effect of feedback to principals, without coaching, on teacher perceptions of instructional leadership and their trust in their principal in 52 schools. Principals were randomly assigned to one of two groups; 26 principals received feedback reports based on surveys completed by their teachers during the year. 26 principals did not receive feedback (control group). About 38 teachers on average per school provided feedback data. Data from teachers and principals were collected in four waves: spring of 2008 and in the fall, winter and spring of 2008-2009. Principals in the feedback group received four feedback reports, one feedback report per wave. We used hierarchical linear growth models to predict growth on the two teachers' reports of the principal's instructional leadership and their trust of their principal. Teacher measures were summarized per principal for each wave (N= 208: 52 principals*4waves).

Feedback Plus Coaching. In the second part of the study, we examined the effects of feedback and coaching with 39 schools (a subset of the 52 schools in the feedback only analysis). All 39

principals received feedback only in their first three waves and feedback plus coaching in their following three waves, thus all principals received feedback in each of 6 waves. Coaching was provided during the last two waves (fourth through sixth), which meant that the last two teacher data collection points were collected after coaching began. On average, principals received 7 coaching sessions for approximately an hour each session (SD=2.88, range 2-15).

We used longitudinal HLM growth models to estimate the effect of coaching on the two outcomes, instructional leadership and teachers' trust of their principal. In this analysis we also used the principal's perception of the validity of the measures/feedback. Our theoretical model indicated that if the principal did not accept the validity of the measures or feedback, then it would be unlikely that positive change would occur. The three-way interaction measured the additional outcome each coaching session might produce in the last wave at different levels of validity.

Findings / Results:

Feedback Alone. The results of the HLM model for instructional leadership, indicated a statistically significant time by feedback interaction effect ($p<.01$) with a feedback effect size of 0.14. Providing feedback reports produced a small but positive effect size on principals' instructional leadership. Similar results were found for relational trust in the principal from teachers (ES=0.16). Please see Table 1 in Appendix B.

Feedback plus Coaching. There was no significant main effect for coaching (Coaching* Wave6 p-value=0.59) or significant two-way interaction effects. However, there was a significant three-way interaction ($p < .0001$), suggesting that instructional leadership ratings were higher for principals receiving more coaching sessions and whose perceived validity of measures/feedback was above the mean (ES =0.34, Hedge's g). Teacher ratings of trust in the principal show similar results but with smaller ES (0.23, Hedge's g), suggesting that trust is more difficult to improve. Please see table 2 in Appendix B.

Because the effects of coaching and feedback depended on the number of coaching sessions delivered and the principal's perceived validity of measures/feedback (mean=3.39, SD=0.49), we modeled data showing the change of outcome and effect sizes associated with different levels of validity and number of coaching sessions. When principals perceive measures/feedback to be less valid, more coaching sessions do not improve instructional leadership; in fact they have a negative effect. However, when the measures/feedback are perceived as more valid, we obtain large positive effect sizes associated with coaching and feedback. For example, in our model15 sessions can create an effect size ranging from -1.29 to 1.62, depending on the principal's perception of validity. We also found similar results with teachers' principal trust scores. The ES for the average validity rating and 15 sessions is 0.88 for instructional leadership and 0.41 for trust. Please see table 3 in Appendix B.

Conclusions:

The results indicate that teachers' perceptions of instructional leadership and trust of their principal can be enhanced when principals are provided with feedback alone. However, when coaching is added the effects are much more powerful and depend on the principal's perception of the validity of the feedback and the number of coaching sessions attended. This study provides new experimental evidence of the efficacy of feedback and coaching as a program for leadership change and development aimed at improving instructional leadership and teacher-principal trust.

Appendices

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Appendix A. References.

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Appendix B. Tables and Figures

Table 1. Instructional Leadership HLM Results for Feedback Only

Fixed Effect	Estimate	Std. Error	p-value
Intercept	3.65	0.08	<.0001
Spring	-0.18	0.03	<.0001
Time (wave)	0.01	0.02	0.52
Intervention (Feedback=1)	0.08	0.12	0.51
Time*Intervention	0.06	0.02	0.01
Variance Component[a]			
Between-principals	0.18	0.04	<.0001
Within-principals	0.04	0.01	<.0001
Fit Statistics ML			
-2 Res Log Likelihood	82.4		
Sample Size	208		

Note: Fifty-two schools were randomly assigned into two equal groups: feedback and no feedback. We tested a model with two binary variables to measure separate changes in spring08 and spring09 but its fit was poorer than using one spring variable.

[a] Time was allowed to vary randomly across principals but was not significant, thus was dropped from the model.

Table 2. Instructional Leadership & Trust in Principal HLM Results for Feedback and Coaching*

	Instructional Leadership			Teachers' Trust in Principal		
Fixed Effect	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Intercept	3.87	0.06	<.0001	3.07	0.14	<.0001
Time	-0.02	0.01	0.02	-0.02	0.01	0.04
Wave 6 (SpringYr2)	-0.06	0.05	0.59	0.04	0.10	0.70
Validity (centered)	0.02	0.04	0.62	-0.06	0.08	0.44
Coaching Sessions	0.03	0.02	0.10	0.03	0.02	0.18
Coaching*Validity	0.01	0.01	0.57	0.01	0.01	0.46
Wave6*Coaching	-0.01	0.01	0.59	-0.02	0.01	0.10
Wave6*Coaching*Validity	0.04	0.01	<.0001	0.03	0.01	0.01
Variance Component						
Between-principals	0.10	0.02	<.0001	0.09	0.02	<.0001
Within-principals	0.03	0.004	<.0001	0.03	0.003	<.0001
Fit Statistics ML						
-2 Res Log Likelihood	9.9			14.8		
Sample size*	223			223		

*Based on 39 schools receiving feedback in three waves (fall, winter, and spring) and feedback and coaching in the following three waves (fall, winter, and spring of next academic year).

Table 3. Predicted Effect Sizes of Instructional Leadership by Number of Sessions by Level of Perceived Validity of Measures/Feedback

% of Principals with validity scores shown	Principals' Validity by # Sessions	Predicted Change in Wave 6	Predicted ES
13%	Validity [2.5-2.75]		
	7 Coaching Sessions	-0.33	-0.67
	11 Coaching Sessions	-0.48	-0.98
	15 Coaching Sessions	-0.63	-1.29
39%	Validity [3.0-3.25]		
	7 Coaching Sessions	-0.19	-0.38
	11 Coaching Sessions	-0.26	-0.53
	15 Coaching Sessions	-0.33	-0.67
24%	Validity [3.5-3.75]		
	7 Coaching Sessions	0.23	0.48
	11 Coaching Sessions	0.40	0.82
	15 Coaching Sessions	0.57	1.16
24%	Validity Score = 4.0		
	7 Coaching Sessions	0.34	0.69
	11 Coaching Sessions	0.57	1.16
	15 Coaching Sessions	0.80	1.62