

Principal Professional Learning Community Behavior in Low Wealth High Schools with Higher and Lower Student Achievement as Measured by Mastery Scores on the New York State Eleventh Grade ELA Regents Exam

By Adrian Adams, Ed.D.

Abstract

This study was designed to analyze non-principal staff supervisors' perceptions of PLC efforts, encouragements, and activities in the six dimensions of a professional learning community (PLC) characterized as shared and supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures. By correlating that data with student achievement, this study sought to find which PLC dimensions and behaviors were associated with high student mastery, despite poverty.

A survey was completed by 33 assistant principals and department chairpersons from selected high schools classified by New York State as suburban or small city districts. The NYS Comprehensive School Report Card demographic data was used to select schools with low-wealth. The schools were further stratified into two groups which had either the lowest or highest percentages of students who attained mastery level, averaged over two years, on the New York State 11th Grade English Language Arts Regents exam.

The data showed that shared and supportive leadership was the strongest and only significant predictor of supervisor placement in lower or higher achievement low-wealth high schools among these New York State school districts.

Introduction

Principal efforts, encouragements, and activities were analyzed for the presence of Professional Learning Community (PLC) practices. Study data revealed that teachers in high schools found to be high performing on the NYS ELA Regents Exam, measured by mastery level student achievement, had significantly higher levels of agreement that PLC practices were present (Passi, 2010). Passi found that supportive structures, a focus on learning, collaborative cultures, and a shared vision were related to mastery level student achievement, according to the perception of teachers. This study sought to extend that teaching staff research by measuring how the school administrators and supervisors other than the school principal compare PLC practices in high and low mastery schools.

This study employed the PLC-R survey instrument developed by Olivier, Hipp and Huffman (2010) to measure professional learning community activities occurring in schools. The PLC-R survey was a revision of the original PLC survey designed to assist in determining the degree of PLC practices in a school within each of the six dimensions. Hord (1997) created a survey designed to identify schools as being professional learning communities. The survey was further refined and used as the baseline for leading a school learning community to implement continuous improvement (Hipp & Huffman, 2010).

This research endeavor surveyed the frequency with which the PLC efforts, encouragements, and activities were practiced by low wealth high school principals as observed and reported by staff supervisors. By correlating that data with student achievement, this study sought to find which PLC dimensions and behaviors were associated with high student mastery, despite poverty. The findings can focus the professional development for secondary school leadership on the most efficacious professional learning community principal behaviors that are predictive of higher English Language Arts Regents exam student mastery achievement in New York State low wealth high schools.

All subjects in this study were from schools with high levels of financial need among the student population. This study controls for poverty by using low wealth schools matched for school size and degree of poverty as measured by percentage of students qualifying for free lunch, and other forms of social services provided by government programs such as student participation in the free and reduced school lunch program.

The effects of poverty on student achievement are well researched. According to a study by Leithwood et al. (2010), "...socio-economic status explained more variation in student achievement across schools than did any other single variable" (p. 696). Rothstein (2004) described politicians as having almost universally concluded that poor school achievement is the result of failing schools with wrongly designed school policies. This political theater has its roots in the common American notion that bad teachers,

unfocused ineffectual leadership, lack of discipline, and weak curricula must be the cause of low achievement. When discussing under-achieving schools, the impact of poverty is the six hundred pound gorilla in the room that fails to be addressed (Berliner, 2005).

Schools with similar populations of children living in poverty, that display vastly different levels of mastery achievement, would seem to indicate that something is being done within those schools to mitigate the influence of poverty. Indeed, caring and motivational exchanges with students and parents have been shown to shrink the achievement gaps in schools with the majority of students living in poverty (Manley & Hawkins, 2013).

This study measured the professional learning community leadership behaviors exhibited by instructional leaders of high schools, the principals, as reported by the supervisors who served as instructional leaders within their respective disciplines. The supervisors' observation of the teachers' classroom behavior, in response to the professional learning community behaviors exhibited by the principal, gives a unique perspective to practices at these schools.

Purpose

The purpose of this study was to contrast the professional learning community activities most frequently used by principals in low wealth high achievement schools with similar schools with low levels of mastery achievement. These low wealth schools were identified in New York State as schools in which 54 percent or more of the students received free and reduced lunch. Higher and lower achievement schools were ascertained by ranking the high poverty schools with the highest to the lowest attainment of mastery on the 11th grade New York State English Language Arts exam. The selection of high schools included the highest scoring 33 percent and the lowest scoring 33 percent of students attaining mastery level on the average of the 2013, and 2014, 11th grade New York State English Language Arts exams.

Impact of Principal Leadership

Significant positive improvements in student learning can be made due to the activities of school leaders (Waters, Marzano, & McNulty, 2003). Many of those activities performed by principals do not directly drive student learning to ascertain new heights. Many of the effects of good principal leadership are indeed hard to quantify (Witziers, Bosker, & Kruger, 2003). This study sought to identify some of those school leader activities that relate to higher student achievement within six different dimensions: supportive leadership, shared values and vision, collaboration, a focus on learning, supportive relationships and supportive structures.

Part of the implications of this study include providing guidance to principals and their district level superiors, as to where to put additional time, professional development, and resources to aid principals in raising student

achievement. A significant difference here though, is that the perceptions in this study are coming from the lens of the fellow administrators and departmental supervisors who can see which of the principals' actions result in professional learning community behaviors. Specifically, which aspects of principals' daily practices should be the first to receive attention for maximum return on investment as measured by attainment of mastery level achievement on the English Language Arts Regents exam. Many more examples of this type of research exist relating to teachers. For instance, one large study (Hattie, 2009) was done to inform principals where to focus their efforts with respect to the actions of their teachers in order to improve achievement. Hattie outlines that leaders do not need to lecture teachers to adopt new theories of practice, but rather listen to the current theories of practice and collaboration within the school culture to see how those can be enhanced and impact current mind frames.

The Role of the Non-Principal Supervisor

At the high school level, the departmental chairperson is the leadership link between the principal and the teachers within an academic discipline. Klar & Brewer (2013) have noted that there is a significant body of research on principals who are successful at increasing student learning by increasing their levels of instructional leadership. Klar & Brewer also note that fostering the capacities of department chairs to participate in instructional leadership has been associated with higher student achievement. A strength of the PLC model is its capacity to aid principals in distributing leadership and developing practices of learning communities within the administrative team that includes assistant principals and department chairs.

Given the non-instructional responsibilities that frequently place time demands on principals, there is a need for multiple individuals to assert instructional leadership (Fullan, 2002; Hallinger, 2005; Barnett & Aagaard, 2007). In schools with high rates of poverty, non-instructional demands often pull principals away from instructional leadership. In high poverty schools there is a clear need for the instructional leadership support that assistant principals and department chairs can provide (Portin, 2000; Resnick & Glennan, 2002).

Kegan and Lahey (2009) noted that school leaders were increasingly asking people to do things they were never trained to do. For instance, departmental leaders were asked to develop teachers in disciplines where they themselves were mere novices.

In the absence of the necessary discipline specific content knowledge and corresponding techniques to teach it, the need for skilled assistant principals and chairpersons becomes magnified. These administrators need to build professional capital among teacher leaders (Hargreaves et al., 2014). As leaders within learning communities, high school supervisors of teachers function as important change agents for instructional leadership.

Chairs whose responsibilities are to supervise teachers perhaps best observe a principal's actions which support instructional improvement. Observations of teachers are performed in search of instructional improvements, and collegial conversations during post-observations enable chairpersons to assess the principal's leadership.

Henderson's (1993) case study revealed chairs that were successful at being agents of school change were goal oriented, had influence with other school administrators, had the technical expertise combined with the interpersonal skills to work effectively with teachers, and were facilitators of collaboration within teacher teams. Weller (2001) concluded that departmental "chairs are in an ideal position to facilitate instructional improvement because of their daily contact with teachers and their own instructional expertise" (p. 74). High school departmental chairs and assistant principals offer a unique perspective as they are charged with the execution of their principals' values (Manley & Hawkins, 2010). The chairs and assistant principals connect all stakeholders to administrative policy. Department chairs in particular typically have authoritarian coercive power and to be successful change agents they must utilize interpersonal and professional skills to earn support from several stakeholders. From an organizational structure standpoint, they must answer to their principals and support teachers in their charge. All the while they must be mindful to foster the group bonding necessary for bridging the department to the rest of the PLC stakeholders (Sergiovanni, 1994; Gaubatz & Ensminger, 2015).

Method

The New York State School Report Card data were used to determine which supervisors were in schools that qualified for inclusion. The high schools throughout New York State were classified as suburban/small city. Rural and urban high schools were not included. Low wealth schools were identified as having a student population in which 54 percent or more of the students were reported to be living in poverty. The potential achievement levels on the New York State English Language Arts Regents examination are 1-4, with level 4 representing a numerical grade of 85 or better. Selected high achievement schools were those in the top one-third of percentages of test taking students attaining level 4 mastery achievement on the New York State English Language Arts Regents examination. Selected low achievement schools were those schools in the bottom one-third for mastery attainment. **Table 1.1** shows the percentage of students living in poverty for the dozen schools selected for both groups with 50 supervisor subjects each. High school assistant principals and departmental chairpersons in low wealth, higher and lower English Language Arts achieving high schools in New York State were administered the Professional Learning Communities Assessment- Revised (Olivier et al., 2010).

The response rate was very low despite presenting opportunities for supervisor subjects to respond in a variety of formats. The surveys were sent as emails, mailed as hard copies, and hand delivered to mailboxes in the dozen high schools that were in each of the two cohorts. This low response rate prevented a factor analysis from being done. However, the reliabilities for the six dimensions of a professional learning community: supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures, were all above .80.

Research Questions

1. How do supervisors in low wealth high schools with higher and lower achievement describe activities in six dimensions of a professional learning community: supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures?
2. How do supervisors in low wealth high schools with lower and higher achievement differ in six dimensions

Table 1.1

Schools Included

<i>Lower Mastery Achievement</i>			<i>Higher Mastery Achievement</i>		
School	%Poverty	%Mastery	School	%Poverty	%Mastery
A	61.0	16.5	Z	56.5	38.0
B	57.5	15.5	Y	58.0	36.5
C	54.0	13.5	X	56.5	36.0
D	75.0	13.5	W	63.5	33.0
E	73.0	12.0	V	54.5	33.0
F	63.5	12.0	U	67.5	28.5
G	68.5	11.0	T	54.5	27.5
H	68.0	11.0	S	68.0	25.0
I	60.0	5.5	R	71.0	24.5
J	66.0	4.5	Q	56.0	23.0

of a professional learning community: supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures?

3. What relationships exist among supervisors' descriptions of principals' actions in six dimensions of a professional learning community: supportive leadership, shared values and vision, collaborative culture, focus on learning, supportive relationships, supportive structures, and their placement in lower and higher achieving high schools?

4. How do supervisors' descriptions of principal professional learning community behaviors in the six dimensions of supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures predict their placement in a lower or higher student achievement school?

Findings

The descriptive statistics of **Table 1.2** showed supervisors in the higher achieving schools reported greater agreement with their principal acting with shared and supportive leadership practices, implementing supportive structures, and upholding a focus on learning.

Research Question Two

How do supervisors in low wealth high schools with lower and higher achievement differ in their descriptions of six dimensions within a professional learning community: supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures?

An independent samples t-test was performed. **Table 2.1** shows the differences in perception of supervisors in lower and higher achieving schools regarding the presence of six professional learning community dimensions: supportive leadership, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures.

As indicated in **Table 2.1**, the only variable with a significant difference between the low wealth high schools with lower achievement on the English Language Arts regents' exam, and the high schools with higher achievement, was the Supportive Leadership dimension. Supervisors rated supportive leadership significantly stronger in the higher mastery schools.

An item frequency analysis was conducted to identify variables containing items with a large difference, herein defined as 20 percent or greater between the 2 Likert choices indicating degrees of disagreement, and the 2 Likert choices indicating degrees of agreement.

Within the Shared and Supportive Leadership variable, **Table 2.2** shows frequency distributions for item 1 "staff members are consistently involved in discussing and making decisions about most school issues." **Table 2.2** showed that 60 percent of the supervisors in lower achieving schools disagreed to strongly disagreed with that statement, compared to only 26 percent of supervisors in higher performing schools.

Table 2.3 displays the frequency distributions for item 2 "principal incorporates advice from staff members to make decisions." In higher achieving schools, 78 percent of supervisors agreed or strongly agreed with that statement compared to only 30 percent of supervisors in lower achieving schools.

Table 1.2

Group Descriptive Statistics

	Type	N	Mean	Std. Dev.	St. Err. Mean	Response Range	Item Mean
Support Lead	Lower	10	25.8000	10.06424	3.18259	13-42	2.35
	Higher	23	33.3913	6.87379	1.43328	29-35	3.04
Vision	Lower	10	26.0000	6.14636	1.94365	15-34	2.89
	Higher	23	26.6957	6.38489	1.33134	27-33	2.97
Collaborative	Lower	10	27.5000	8.00347	2.53092	12-39	2.75
	Higher	23	28.9565	7.11898	1.48441	26-32	2.90
Focus	Lower	10	17.1000	5.91514	1.87053	8-28	2.44
	Higher	23	19.5217	4.50121	.93857	22-33	2.79
Relationships	Lower	10	14.3000	3.33500	1.05462	9-18	2.86
	Higher	23	14.9130	3.52798	.73563	28-30	2.98
Structures	Lower	10	26.6000	6.63660	2.09868	18-38	2.66
	Higher	23	30.3043	6.67039	1.39087	28-35	3.03

Table 2.1*Independent Samples Test*

	Achievement	N	Mean	t	df	Sig.(2-tailed)
Support Lead	Lower	10	25.80	-2.526	31	.017
	Higher	23	33.39			
Vision	Lower	10	26.00	-.291	31	.773
	Higher	23	26.69			
Collaborative	Lower	10	27.50	-.521	31	.606
	Higher	23	28.95			
Focus	Lower	10	17.10	-1.291	31	.206
	Higher	23	19.52			
Relationships	Lower	10	14.30	-.466	31	.644
	Higher	23	14.91			
Structures	Lower	10	26.60	-1.468	31	.152
	Higher	23	30.30			

Table 2.2*Frequency Distributions Question 1: Staff Involved in Decisions*

Achievement	Response	Frequency	Percent	Cumulative Percent
Lower	1.0	5	50.0	50.0
	2.00	1	10.0	60.0
	3.00	3	30.0	90.0
	4.00	1	10.0	100.0
Total		10	100.0	100.0
Higher	1.00	1	4.3	4.3
	2.00	5	21.7	26.1
	3.00	11	47.8	73.9
	4.00	6	26.1	100.0
Total		23	100.0	100.0

Table 2.3*Frequency Distributions Question 2: Principal Incorporates Advice*

Achievement	Response	Frequency	Percent	Cumulative Percent
Lower	1.00	3	30.0	30.0
	2.00	4	40.0	70.0
	3.00	2	20.0	90.0
	4.00	1	10.0	100.0
Total		10	100.0	100.0
Higher	1.00	0	0	0
	2.00	5	21.7	21.7
	3.00	8	34.8	56.5
	4.00	10	43.5	100.0
Total		23	100.0	100.0

Table 2.4*Frequency Distributions Question 5: Opportunities for staff to Initiate Change*

Achievement	Response	Frequency	Percent	Cumulative Percent
Lower	1.0	4	40.0	40.0
	2.00	2	20.0	60.0
	3.00	3	30.0	90.0
	4.00	1	10.0	100.0
Total		10	100.0	100.0
Higher	1.00	0	0	0
	2.00	4	17.4	17.4
	3.00	14	60.9	78.3
	4.00	5	21.7	100.0
Total		23	100.0	100.0

As shown in **Table 2.4**, only 40 percent of supervisors in lower achieving schools agreed or strongly agreed with item 5 that "opportunities are provided for staff members to initiate change" compared to 83 percent of supervisors in higher achieving schools.

As for the other five variables, shared values and vision, collaborative culture, a focus on learning, supportive relationships, and supportive structures, none of the perceived differences were significant. The supportive structure variable had mean scores of 27 for lower achieving schools and 30 for higher achieving schools. That difference approached significance at $p = .152$, relative to the other variables.

The respondents in the higher mastery achievement schools distinguished their schools as having staff involved in decisions and having school leaders who incorporated staff advice in decisions. The higher achieving school principals offered more opportunities for staff to make changes, and had more supportive structures in place to provide a professional learning community environment.

Supportive leadership was the dimension most highly correlated with higher achieving, low-wealth schools. A Spearman correlation analysis was conducted, **Table 3.1**, to reveal relationships between all the variables. Supportive leadership was most related to higher achieving schools accounting for 12.7 percent of the binary relationship. Supportive leadership had the most highly positive correlation with the other dimensions at .738 for collaboration, .738 for vision, .705 for focus on learning, .570 for supportive relationships, and .754 for supportive structures. All of those correlations were significant, $p < .01$. The variable least correlated with supportive leadership, relationships ($r = .570$), was still a strong positive relationship.

A stepwise logistic regression was used to determine the degree to which the variables were able to predict the placement of respondent supervisors into either a higher

or lower achieving low wealth high school. **Table 4.1** showed that model 1 added the predictive variable supportive leadership to the constant. Model 1 was able to account for 75.8 percent of the variance in the school placement of supervisors. Higher shared and supportive leadership predicted placement in higher achieving schools.

Conclusions

These high schools had similar levels of poverty and yet, the levels of mastery that their students achieved on the English Language Arts Grade 11 Regents exam differed significantly. One has to conclude that school leadership makes a difference specifically in providing supportive leadership and promoting a shared vision for the purpose of the school.

The research literature emphasizes the power of collaboration, yet the quality of the dialogue, inquiry, plans of action and evaluations of results seem to be elements of collaboration most often ignored. School leaders have to raise the quality of dialogue in all collaborative teams and evaluate their outcomes. A central tactical component here is to professionally develop assistant principals and department chairs because they are likely to take the collaborative policies and turn those into collaborative practice (Gaubatz & Ensminger, 2015).

Bolman and Deal (2008) Senge (2006) and Reeves (2005) emphasize the importance of supportive leadership at school. In the case of these high needs schools, the principal's capacity to provide supportive leadership was the only variable that differed significantly between higher and lower achieving schools.

Supportive leadership behaviors that were most distinctive in higher achieving schools included having staff involved in decisions, principals taking advice from staff, and staff being able to initiate change. Administrative support has been found to be a significant predictor of teachers' job

satisfaction which is an important factor in raising student achievement (Tickle, Chang, & Kim, 2011; Ingersoll, 2001). School leaders should focus on developing the capacity of teachers to be involved in decisions, listen to teacher advice and help teachers initiate changes in practices related to teaching, learning, and supportive structures at school.

Hattie (2009) conducted a meta-analysis of over 800 studies on variables that impacted student achievement. He found that leaders giving constructive feedback to teachers

regarding the teaching and learning within their classrooms had more impact on student achievement than any other measured activity in those schools. Further, Hattie reported that these leaders provided a continuous loop of feedback that gave teachers a chance to add to their pedagogical knowledge and improve learning. In essence, the more skilled leaders are at supporting teachers' acquisition of instructional decision making in their tool kit, and the more teachers reflect on their teaching, the better the teachers are able to serve their diverse learners (Manley & Hawkins, 2010).

Table 3.1

Correlation Matrix

		Type	SupprtLdr	Vision	Collabortv	Focus	Relations
Type	rho	1.000					
	r ²						
	N						
SupprtLdr	rho	.357*					
	r ²	12.7					
	N	33					
Vision	rho	.108	.738**				
	r ²	11.6	54.5				
	N	33	33				
Collabortv	rho	.073	.738**	.681**			
	r ²	.5	54.5	46.4			
	N	33	33	33			
Focus	rho	.219	.705**	.658**	.713**		
	r ²	4.8	49.7	43.3	50.8		
	N	33	33	33	33		
Relations	rho	.129	.570**	.729**	.728**	.599**	
	r ²	1.7	32.5	53.1	53	35.9	
	N	33	33	33	33	33	
Structures	rho	.250	.754**	.801**	.656**	.561**	.710**
	r ²	6.3	56.9	64.2	43	31.5	50.4
	N	33	33	33	33	33	33

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.1

Classification Table^a

Observed		Predicted Type		Percentage Correct
		Lower	Higher	
Type	Lower	4	6	4.0
	Higher	2	21	91.3
Step 1				
Overall Percentage				75.8

a. Variable entered on Step 1: Shared & Supportive Leadership

Supportive leadership was significantly related to all other variables; shared vision, collaboration, a focus on learning, supportive relationships, and supportive structures. The most critical constructs that comprised supportive leadership were the principals' capacity to share leadership, decision making, and the initiation of change with teachers. Highly effective principals develop the professional capital of their teachers (Hargreaves & Fullan, 2012). To raise student mastery, principals, supervisors, and teachers must be involved in continuous dialogue and inquiry about current practices, desired results for each student, the implementation of action plans, student gaps in mastery, and the analysis of results. The principal is the responsible agent for effective shared leadership at the school.

Recommendations

If New York State school districts are trying to achieve improved ELA Regents exam scores, then one of the most impactful uses of time, money and energy would be to professionally develop principals in the knowledge of and ability to provide supportive leadership. Supervisors of departments should be developed in the practices of supportive leadership, shared vision, and supportive structures that enhance professional capital at the high school (Hargreaves & Fullan, 2012). Staff should be encouraged to take chances to teach to the collective vision of the school created by the contributions of all stakeholders.

A shared vision that addresses teaching, learning and collaborative discussions and inquiry within the school can contribute to higher achievement. Principals must be professionally developed to lead with inquiry. Principals must be supported when they begin leading stakeholders in the collective creation of shared values and vision for their school.

Supportive structures should address providing the time to develop staff and facilitate ongoing collaborative work. For example, a schedule that allows for collective learning and shared practice should be in place. Allocation of resources such as technology, instructional materials, experts in the field, should be prioritized to support continuous learning.

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