Principal and School-Level Effects on Elementary School Student Achievement

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The purpose of this study was to determine if principal tenure, principal stability, and principal educational experience in public education along with school-level variables predicted elementary school student achievement. A second purpose was to examine whether there was a significant difference between (a) levels of principal tenure and levels of principal educational experience on elementary school student achievement and (b) levels of principal stability and levels of principal educational experience on elementary school student achievement. The findings revealed that the school-level variables were stronger predictors of student achievement than principal-level variables. However, for both grade 3 and grade 5, principal tenure was a significant predictor across subject areas tested. As the length of a principal's tenure at a school increased, the schools mean scale scores increased. Findings also revealed that schools with greater principal stability had higher school mean scale scores. In addition, principal educational experience had less of an impact on student achievement than principal tenure or principal stability.

INTRODUCTION

The educational literature is rich with descriptions focusing on school leaders as related to their roles. With increased accountability being placed on schools, principals are expected to lead schools to high levels of student achievement (Chrispeels, 2004). This is not a new concept. In 1979, Edmonds identified school principals as essential to improving student achievement. Since that time, many researchers and writers have confirmed Edmond's belief that school principals can have a significant impact on student achievement (Bottoms, O'Neill, Fry, & Hill, 2003; Hess, 1999; Marks & Printy, 2003; Nettles & Petscher, 2006; O'Donnell & White, 2005; Scheerens & Bosker, 1997; Waters, Marzano, & McNulty, 2003; Zigarelli, 1996).

NCPEA International Journal of Educational Leadership Preparation, Vol. 8, No. 1– March 2013
ISSN: 2155-9635

Principals have more responsibilities than ever before (Chrispeels, 2004). In addition to dealing with personnel issues, student discipline problems, parent concerns, and negative publicity in the media, principals must ensure that all public school students are academically successful (Gentilucci & Muto, 2007). The No Child Left Behind Act (2002) set very specific academic goals for the nation's public school students that include all students regardless of race/ethnicity, income, or disability achieving at grade level by 2014.

Effective schools are run by effective principals who share in common the ability to lead people, not just lead programs (Bottoms & O'Neill, 2001). They described effective principals as change agents. Similarly, O'Donnell and White (2005) listed facilitating effective teaching and learning as the primary responsibility for principals. The essential element in effective leadership is that principals who are able to significantly improve teaching and learning in the schools they lead are those that can influence teacher beliefs and attitudes about teaching and learning (Fullan & Stiegelbauer, 1991).

Accountability is too high for principals to provide all of the leadership that is needed for schools to be successful (Elmore, 2000). Sharing leadership responsibilities is the norm in highly effective schools that experience high levels of learning for all students (Blanchard & Bowles, 1998). Sharing leadership responsibilities includes making decisions based on teacher beliefs that all students can be successful (Fullan, 2001; Wesner, 1993). Sharing the belief that schools can successfully teach all students is strengthened as teachers and principals work together as teams that are focused on overcoming barriers to student learning (Schmoker, 1999).

In order to change school culture to improve student learning, principals must be prepared for the responsibilities of the principalship (Gamage, 2009; Hess & Kelly, 2007). Brent, Haller, and McNamara (1997) wrote that principal certification programs were not adequately preparing principals for the actual responsibilities that were encountered when principals enter the profession. Being underprepared for the responsibilities of the job has resulted in the failure of many new and inexperienced principals (Daresh, 1986). Realizing that stable school leadership is crucial to improving student achievement, efforts must be made to prepare, recruit, and retain quality school principals (Useem, Christman, Gold, & Simon, 1996). To recruit new school leaders, schools should identify and prepare capable teachers to become school leaders (Gilman & Lanman-Givens, 2001). Additionally, principal preparation programs should be restructured to focus on relevant issues instead of traditional coursework and new principals should be provided successful administrators as mentors (Bottoms & O'Neill, 2001). Certification should include extensive authentic application of effective school leadership instead of courses that are required in most universities (Sykes, 2000).

In addition to being prepared to successfully lead schools, principals must be given adequate time to have significant impact on school culture and student achievement (Hall & Hord, 2001). Changing the school culture to embrace school improvement efforts takes time (McAdams, 1997). Increased accountability, growing responsibilities, and long hours have resulted in many principals leaving positions or the profession (Richards, 2000; Schiff, 2002). If Hall and Hord are correct in stating that significant change takes three to five years, then retaining quality principals is of paramount importance (Archer, 2003; Hertling, 2001).

Purpose of the Study

The purpose of this study was to determine if principal tenure, principal stability, and principal educational experience in public education along with school-level variables predicted elementary school student achievement. A second purpose was to examine whether there is a significant difference between (a) levels of principal tenure and levels of principal educational experience on elementary school student achievement and (b) levels of principal stability and levels of principal educational experience on elementary school student achievement.

Methodology

An ex post facto correlational and group comparison research design was employed. In all, there were nine independent variables and 11 dependent variables. The independent variables included in the study were principal tenure, principal stability, principal educational experience, principal gender, principal race or ethnicity, square root of student enrollment, percentage of minority students, percentage of students identified as receiving free or reduced lunch, and percentage of students identified with a disability. The dependent variables were the schools mean scale scores for third and fifth grade students on the reading, English/language arts, mathematics, science, and social studies sections of the CRCT. In addition, fifth grade students were assessed on writing.

Utilizing the Governor's Office of Student Achievement website (GOSA), there were 1,316 of Georgia elementary schools identified. Of these schools, 293 schools were excluded from the study for not meeting the prekindergarten through fifth grade criterion. In total, the elementary school population was 1,023 schools. All student achievement data and school-level data were collected from a public website, the Georgia Governor's Office of Student Achievement (GOSA, 2010), whereas all elementary school principal data were collected from the Georgia Professional Standards Commission (GaPSC, 2010).

Student achievement as in most states is embedded in the state's context for determining student performance. The performance standards adopted in Georgia are the basis of the State's student curriculum. Georgia's students are to learn at each grade level. Schools administer Georgia's criterion referenced competency tests (CRCT) in the spring of each year to students in first grade through the eighth grade to assess whether students mastered the content. Students are tested in reading, English/language arts language arts, mathematics, science, social studies, and in selected grades writing. Through the test development process, the Georgia Department of Education (GaDOE) established content validity of each assessment. In addition, the GaDOE established instrument score reliability through the use of Cronbach's alpha, standard error of measurement, and the conditional standard error of measurement. All three indices indicated that each assessment was sufficiently reliable for its intended purpose.

Multiple regression was employed to determine which, if any, principal-level variables and school-level variables predict elementary school student achievement. The two-way factorial analyses of variance was used to determine whether (a) levels of principal tenure and levels of principal educational experience and (b) levels of principal stability and levels of principal educational experience affects elementary school student achievement. All statistical assumptions were checked and met for the statistical tests.

Results

In the 1,023 elementary schools, there were 742 (72.60%) female principals and 280 (27.40%) male principals. In addition, 660 (64.2%) principals were identified as White and 363 (35.48%) principals were identified as minority. Table 1 presents descriptive statistics for other principal variables such as years of educational experience, length of time at the school (tenure), and the number of principals (stability) at the school over the last 10 years. School-level variables included the square root of student enrollment, percentage of minority students (% minority), percentage of students with a disability (% SWD), and the percentage of students eligible for free or reduced lunch (% F R Lunch). Table 2 presents descriptive statistics for the dependent variables employed in the analysis. For grade 3 and grade 5, CRCT school mean scale scores included reading, English/language arts, mathematics, science, and social studies. In addition, grade 5 included the CRCT school mean scale scores for writing.

Table 1
Principal and School-Level Descriptive Statistics

	Mean	SD	Skewness	Kurtosis
Principal Experience	22.58	7.54	0.22	-0.56
Principal Tenure	3.57	3.10	1.00	0.35
Principal Stability	2.81	1.19	0.48	-0.06
SQRT Enrollment	24.67	4.46	0.52	0.67
% Minority Students	39.75	32.58	0.56	-1.07
% SWD	10.12	3.31	0.54	0.62
% Students F R Lunch	62.90	25.81	-0.51	-0.67

Note. n = 1.023.

Table 2
Descriptive Statistics for Grade 3 and Grade 5 CRCT School Mean Scale Scores

CRCT	Mean	SD	Skewness	Kurtosis
R3	831.15	11.27	0.17	-0.20
ELA3	830.41	11.51	0.33	-0.05
M3	830.96	18.37	0.22	-0.10
S3	828.43	16.91	0.13	-0.30
SS3	818.07	13.53	0.35	0.10
R5	825.14	9.71	0.31	-0.15
ELA5	834.57	10.90	0.47	0.28
M5	832.10	19.08	0.39	-0.05
S5	827.42	21.15	0.33	-0.11
SS5	815.52	14.66	0.46	-0.08
W5	211.65	12.39	0.47	0.59

Note. R–reading; ELA–English/language arts, M-math; S–science, and SS-social studies.

Pearson correlation coefficients were generated to examine the relationship among the independent variables (see Table 3). There was a moderate positive relationship between the percentage of minority students and the percentage of students identified on free or reduced

lunch, $r(1021) = .63$, $p < .001$. A moderate positive relationship was generated between the percentage of minority students and principal race or ethnicity, $r(1021) = .60$, $p < .001$. A weak to moderate positive relationship was produced between the percentage of students identified on free or reduced lunch and principal race or ethnicity, $r(1021) = .43$, $p < .001$. In addition principal tenure and principal stability yielded a weak to moderate negative relationship, $r(1021) = -.42$, $p < .001$. This is reasonable due to the fact that principal stability is defined as the number of principals at a school during a 10-yeara period and principal tenure is defined as the length of time that the current principal has been serving as the principal at that school. Principal tenure and principal educational experience yielded a weak to moderate positive relationship, $r(1021) = .38$, $p < .001$. A weak to moderate negative relationship was produced between the percentage of students identified on free or reduced lunch and the square root of student enrollment, $r(1021) = -.32$, $p < .001$.

Table 3
Pearson Correlation Coefficients among Principal and School-Level Variables

	Principal Experience	Principal Tenure	Principal Stability	Principal Gender	Principal Race or Ethnicity	SQRT Enrollment	% Minority	% SWD
Principal Tenure	0.38*							
Principal Stability	0.19*	-0.42*						
Principal Gender	0.13*	-0.06	0.03					
Principal Race or Ethnicity	0.07	0.01	-0.01	0.06				
SQRT Enrollment	0.01	-0.09	-0.05	0.05	-0.31*			
% Minority	0.01	0.02	0.05	0.07	0.60*	-0.25*		
% SWD	0.03	-0.01	-0.02	0.01	-0.21*	0.14*	0.21*	
% Students F R Lunch	0.01	-0.01	0.12**	-0.01	0.43*	-0.32*	0.63*	-0.16*

Note. Gender: 0–male, 1-female; Race or ethnicity: 0-White, 1-minority.
n= 1,023; *$p < .001$, **$p < .005$.

Each of the dependent variables (CRCT school mean scale scores) were regressed on the nine independent variables. The regression model was significant for the five grade 3 models. Table 4 presents a summary of the grade 3 CRCT analyses. It is interesting to note that the percentage of minority students and the percentage of students identified as receiving free or reduced lunch were significant in each of the models. As the percentage of minority students and the percentage of students identified as receiving free or reduced lunch increased, CRCT school mean scale scores decreased. Furthermore, principal tenure was significant in two of five models for grade 3 students. As the length of principal tenure at the school increased, the CRCT school mean scale scores increased.

Table 4
Summary of Regression Models for the Grade 3 CRCTs

CRCT	Overall Model Significance	Significant IVs	b	t	*p*
R3	$R^2 = .67$, $R^2_{adj} = .67$, $F(9, 1011) = 232.09$, $p < .001$	% Minority	-0.03	-3.09	.002
		% F R Lunch	-0.34	-32.72	< .001
ELA3	$R^2 = .66$, $R^2_{adj} = .66$, $F(9, 1011) = 216.02$, $p < .001$	Tenure	0.09	2.35	.019
		Principal R/E	1.38	-2.39	.017
		% Minority	-0.02	-2.32	.021
		% F R Lunch	-0.35	-31.91	< .001
M3	$R^2 = .63$, $R^2_{adj} = .63$, $F(9, 1011) = 190.32$, $p < .001$	Tenure	0.48	3.53	< .001
		SQRT Enroll	0.20	2.32	.002
		% Minority	-0.11	-7.12	< .001
		% F R Lunch	-0.46	-25.36	< .001
S3	$R^2 = .70$, $R^2_{adj} = .70$, $F(9, 1011) = 261.25$, $p < .001$	% Minority	-0.90	-6.82	< .001
		% F R Lunch	-0.47	-31.22	< .001
SS3	$R^2 = .63$, $R^2_{adj} = .63$, $F(9, 1011) = 191.67$, $p < .001$	% Minority	-0.03	-2.28	.022
		% SWD	-0.17	-2.13	0.34
		% F R Lunch	-0.40	-29.88	< .001

Note. Principal race or ethnicity (Principal R/E); Square root of student enrollment (SQRT Enroll). R–reading; ELA–English/language arts, M-math; S–science, and SS-social studies.

Like the grade 3 CRCT regression models, each of the grade 5 CRCT regression models were significant. Table 5 presents a summary of the grade 5 CRCT analyses. The percentage of students identified as receiving free or reduced lunch was significant in each of the six models. As the percentage of students identified as receiving free or reduced lunch increased, CRCT school mean scale scores decreased. Principal tenure and the percentage of minority students were significant in five of six models, whereas principal race or ethnicity was significant in three of five models. As the percentage of minority students increased, CRCT school mean scale scores decreased. Whereas as the length of principal tenure at a school increased, CRCT school mean scale scores increased. CRCT school mean scale scores were higher in schools with White principals. One other noteworthy variable that was significant in two of five regression models was the square root of student enrollment. In these two models as the square root of student enrollment increased, CRCT school mean scale scores increased.

An examination of levels of principal educational experience and levels of principal stability was conducted with a two-way factorial ANOVA. Principal experience consisted of three levels; (a) 14 years or less (*1*), (b) 15 years to 24 years (*2*), and (c) 25 years or more (*3*). Principal stability was defined as the number of principals at a school over a 10 year period. Principal stability consisted of three levels; (a) one or two principals (1), (b) three principals (*2*), and (c) four or more principals (*3*).

Table 5
Summary of Regression Models for the Grade 5 CRCTs

CRCT	Overall Model Significance	Significant IVs	b	*t*	*p*
R5	$R^2 = .65$, $R^2_{adj} = .65$, $F(9, 1011) = 208.59$, $p < .001$	Tenure	0.19	2.70	.007
		Principal R/E	-1.42	2.89	.004
		% Minority	-0.04	-4.30	< .001
		% F R Lunch	-0.29	-30.83	< .001
ELA5	$R^2 = .56$, $R^2_{adj} = .53$, $F(9, 1011) = 141.01$, $p < .001$	Tenure	0.26	2.94	.003
		Principal R/E	1.97	3.17	.002
		% Minority	-0.04	-3.40	.001
		% F R Lunch	-0.30	-25.12	< .001
M5	$R^2 = .55$, $R^2_{adj} = .54$, $F(9, 1011) = 135.06$, $p < .001$	Tenure	0.38	2.46	.014
		Principal R/E	4.05	3.67	< .001
		SQRT Enroll	0.35	3.55	< .001
		% Minority	-0.08	-4.35	< .001
		% F R Lunch	-4.92	-23.50	< .001
S5	$R^2 = .60$, $R^2_{adj} = .60$, $F(9, 1011) = 168.23$, $p < .001$	Tenure	0.39	2.43	.015
		% Minority	-0.08	-4.31	< .001
		% F R Lunch	-0.58	-26.51	< .001
SS5	$R^2 = .61$, $R^2_{adj} = .60$, $F(9, 1011) = 173.42$, $p < .001$	% Minority	-0.03	-2.27	.023
		% F R Lunch	-0.43	-28.54	< .001
W5	$R^2 = .53$, $R^2_{adj} = .52$, $F(9, 1011) = 126.11$, $p < .001$	Tenure	0.30	2.96	.004
		Principal Gender	1.21	1.97	.049
		Principal R/E	1.99	2.74	.006
		SQRT Enroll	0.38	5.74	< .001
		% F R Lunch	-0.32	-23.46	< .001

Note. Principal race or ethnicity (Principal R/E); Square root of student enrollment (SQRT Enroll). R–reading; ELA–English/language arts, M-math; S–science, SS-social studies, and W - writing.

A summary of the results for the grade 3 analyses are presented in Table 6. In all five analyses conducted, there was not a significant interaction effect nor was there a significant effect for principal experience. These results are not presented here. The effect of principal stability was significant in all five analyses. Schools with the greatest principal stability significantly outperformed schools with less principal stability. In all instances, schools with one or two principals over the 10 year period scored significantly higher than schools with four or more principals over the 10 year period. For reading, schools with one or two principals scored significantly higher than schools with three principals over the 10 year period.

In all six two-way factorial ANOVAs conducted, there was not a significant interaction effect nor was there a significant effect for principal experience. These nonsignificant interaction effects and the nonsignificant principal experience effect are not presented. However, the principal stability effect was significant for all six analyses (see Table 7). Like the grade 3 analyses, the grade 5 analyses included the principal stability effect. Schools with the greatest principal stability outperformed schools with less principal stability. Schools with one or two principals over the 10 year period scored significantly higher on the CRCT than schools with three principals over the 10 year period and schools with four or more principals over the 10 year period.

Table 6
Summary of Factorial ANOVAs for Principal Experience and Principal Stability (Grade 3)

CRCT	Stability Significance	Post Hoc Difference	Difference	LS Mean (Group)	SE	n
R3	$F(2, 1014) =$	1 and 2	-2.44, $p = .03$	1 – 832.84	.66	445
	4.66, $p = .01$	1 and 3	-2.63, $p = .025$	2 – 830.40	.68	310
				3 – 830.22	.75	268
ELA3	$F(2, 1014) =$	1 and 3	-3.30, $p = .004$	1 – 832.12	.67	445
	5.56, $p = .004$			3 – 828.82	.76	268
M3	$F(2, 1014) =$	1 and 3	4.24, $p = .027$	1 – 833.07	1.07	445
	4.03, $p = .018$			3 – 828.83	1.21	268
S3	$F(2, 1014) =$	1 and 3	-3.93, $p = .026$	1 – 830.20	.99	445
	3.64, $p = .026$			3 – 826.27	1.12	268
SS3	$F(2, 1014) =$	1 and 3	-3.11, $p = .029$	1 – 819.44	.79	445
	3.48, $p = .031$			3 - 816.34	.90	268

Note. Interaction effect of principal experience and principal stability and the effect of principal experience were nonsignificant and not presented here. R–reading; ELA–English/language arts, M-math; S–science, and SS-social studies.

Table 7
Summary of Factorial ANOVAs for Principal Experience and Principal Stability (Grade 5)

CRCT	Stability Significance	Post Hoc Difference	Difference	LS Mean (Group)	SE	n
R5	$F(2, 1014) =$	1 and 2	-2.50, $p = .007$	1 – 826.68	.57	445
	4.93, $p = .007$			2 – 824.19	.59	310
ELA5	$F(2, 1014) =$	1 and 2	-3.25, $p = .001$	1 – 836.81	.63	445
	7.81, $p < .001$	1 and 3	-3.03, $p = .005$	2 – 833.58	.66	310
				3 – 833.77	.72	268
M5	$F(2, 1014) =$	1 and 2	4.16, $p = .029$	1 – 834.68	1.12	445
	4.36, $p = .013$	1 and 3	-4.11, $p = .045$	2 – 830.52	1.16	310
				3 – 830.57	1.26	268
S5	$F(2, 1014) =$	1 and 2	-5.72, $p = .004$	1 – 830.85	1.24	445
	5.77, $p = .003$	1 and 3	-4.59, $p = .043$	2 – 825.13	1.28	310
				3 – 826.26	1.40	268
SS5	$F(2, 1014) =$	1 and 2	-3.164 $p = .01$	1 – 817.54	.86	445
	4.96, $p = .007$			2 – 813.87	.89	310
				3 - 814.50	.97	268
W5	$F(2, 1014) =$	1 and 2	-3.25, $p = .005$	1 – 214.06	.72	445
	6.91, $p = .002$	1 and 3	-3.25, $p = .001$	2 – 210.81	.75	310
				3 – 210.81	.82	268

Note. Interaction effect of principal experience and principal stability and the effect of principal experience were nonsignificant and not presented here. R–reading; ELA–English/language arts, M-math; S–science, SS-social studies, and W -writing.

An examination of levels of principal educational experience and levels of principal tenure was conducted with a two-way factorial ANOVA. Principal experience consisted of three levels; (a) 14 years or less (*1*), (b) 15 years to 24 years (*2*), and (c) 25 years or more (*3*).

Principal tenure was defined as a length of time. Principal tenure consisted of three levels; (a) one year (*1*), (b) two or three years (*2*), and (c) four or more years (*3*).

The two-way factorial ANOVAs for grade 3 did not yield a single significant interaction effect or a significant effect for principal educational experience across the five CRCT school mean scale scores. The effect of principal tenure was significant at .05 alpha level for mathematics and very close to the .05 alpha level for reading (p = .06) and English/language arts (p = .07). For grade 3 CRCT mathematics, principal tenure was significant, $F(2, 1014) = 5.36$. p = .005. Schools with principals (LS Means = 834.15 SE = 1.33, n = 420) with at least four years at their current school outperformed schools in mathematics with principals (LS Means = 828.46, SE = 1.13, n = 303) with one year at their current school. For grade 3 CRCT mathematics, the interaction effect was not significant, $F(4, 1014) = 1.66$, p = .17, and principal experience was not significant, $F(2, 1014) = 1.85$. p = .16.

The two-way factorial ANOVAs for grade 5 were not significant for mathematics, science, and social studies. For grade 5 reading, English/language arts, and writing, principal educational experience was significant (see Table 8) and principal tenure was significant for English/language arts. Table 8 presents the results of these analyses. It is very interesting to note that schools with principals that had 14 years or less educational experience outperformed schools that had more educational experience across reading, English/language arts, and writing. The interaction effect between principal experience and principal tenure was not significant in any of the six grade 5 analyses. For English/language arts, principal tenure was significant, $F(2, 1014) = 4.50$ $p < .011$. Schools with principals (LS Means = 837.03 SE = 0.79, n = 420) with at least four years at their current school outperformed schools in mathematics with principals (LS Means = 833.96, SE = 0.67, n = 303) with one year at their current school.

Table 8
Summary of Factorial ANOVAs for Principal Experience and Principal Tenure (Grade 5)

CRCT	Significance	Post Hoc Difference	Difference	LS Mean (Group)	SE	N
R5	Experience – $F(2, 1014) = 3.00$, p = .05	1 and 2	-2.35, p = .044	1 – 827.00 2 – 824.64	.85 .45	158 463
ELA5	Experience – $F(2, 1014) = 4.70$, $p < .009$	1 and 2 1 and 3	-3.22, p = .008 -3.04, p = .002	1 – 837.36 2 – 834.14 3 – 834.32	.95 .50 .61	158 463 405
	Tenure – $F(2, 1014) = 4.50$, $p < .011$	1 and 3	3.06, p = .009	1 – 833.96 3 – 837.03	.67 .79	303 420
M5	NS					
S5	NS					
SS5	NS					
W5	Experience – $F(2, 1013) = 4.55$, p = .011	1 and 2	-3.70, p = .008	1 – 214.64 2 – 210.94	1.01 .58	158 462

Note. NS = not significant.

DISCUSSION AND CONCLUSION

Principal tenure, educational experience, stability, race or ethnicity, and gender were examined in the context of student achievement. In addition, school-level factors of student enrollment, percentage of minority students, percentage of students identified with a disability, and the percentage of students receiving free or reduced lunch were examined. Results of this study indicated principal tenure and principal stability significantly impacted achievement of grade 3 and grade 5 students. CRCT school mean scale scores increased as the length of a principal's tenure at a school increased. Schools with greater principal stability also had higher CRCT school mean scale scores. These findings lend support to the statement of Hall and Hord (2001) that indicated keeping principal turnover low and retaining principals is critical to quality school improvement.

Leithwood, Seashore, Anderson, and Wahlstrom (2004) reviewed the literature focusing on the effects of school leadership on student learning. Their review concluded that school leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school, and leadership effects are usually largest where they are needed most. In addition, their review revealed three specific sets of practices to include such as setting directions, developing people and redesigning the organization.

While analyzing the principal-effects and school-level effects data the researchers noted parallels with other research related to applied practices, organization processes and organization design. This is an area for future study and may hold value for school improvement. The data also revealed not all factors of the research were predictors of achievement.

Principal educational experience was not a significant predictor of school mean scale scores on the CRCT in any of the regression models. In addition, the level of principal educational experience yielded conflicting results. In the factorial ANOVAs of principal educational experience and principal stability, principal educational experience was not significant for grade 3 or grade 5 student achievement. Furthermore, in the factorial ANOVAs that included principal educational experience and principal tenure, principal educational experience was not significant for grade 3 student achievement. However, at grade 5 principal educational experience was significant for three of six student achievement tests. The results for the three significant findings indicated principals with fewer than 14 years educational experience had significant higher student achievement than principals with 15 years to 24 years of educational experience and principals with 25 years or more educational experience. This is certainly worthy of a more in-depth investigation and runs contrary to the findings of Papa, Lankford, and Wyckoff (2002) that indicated principal experience is the most important indicator of principal success.

School-level variables affected elementary school student achievement. The percentage of students identified receiving free or reduced lunch and the percentage of minority students were stronger predictors of elementary school academic achievement than were the variables related to school principals. The socioeconomic status of students has consistently been found to be the primary indicator of student achievement (Andrews & Soder, 1987; Firestone & Wilson, 1989; Howard, 2008; Kannapel & Clements, 2005; Siegrest, Weeks, Pate, & Monetti, 2009). For the foreseeable future, it appears that schools will continue to struggle to overcome socioeconomic barriers in order to improve student achievement.

All efforts to alleviate the negative impact of student socioeconomic status on student achievement are welcome. Complementary efforts to enhance leadership practices related to student achievement appear to be a worthy goal. Hallinger and Heck (1999) classified leadership practices into three categories to include "purposes, people, and structures and social systems." These practices focus on setting the conditions and developing leaders to better serve the leader challenged with increasing student achievement. Although important, student socioeconomic status is only one factor among many. The existence of other means to increase student achievement is encouraging. The findings revealed in this research may form the basis of future interventions. In all cases more research on each of the identified factors seems appropriate.

The research revealed the potential of interventions related to decisions on hiring and retaining principals. Hiring and retaining principals are important practices and must be mastered if schools are to meet the goals set by the NCLB Act. Schools must hire principals that are prepared to effectively lead schools. Moreover, it is imperative schools retain principals for a sufficient period of time in order to have a significant impact on student achievement.

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