

## **Effective Teaching and Learning Environments and Principal Self-Efficacy**

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**Annotation:** Principal self-efficacy influences the effectiveness of teaching and learning in the school environment. A heterogeneous sample of 284 principals was surveyed about their self efficacy in fostering effective instructional environments. Four separate stepwise regression analyses were conducted to identify the most important variables in predicting the four criteria variables: (1) self-efficacy in instructional leadership, (2) self-efficacy in management, (3) reported time devoted to instructional leadership, and (4) reported time devoted to management.

**Abstract:** This article discusses the results of an exploratory study of principal self-efficacy beliefs for facilitating effective instructional environments at their schools. Participants included 284 principals from 12 states. Participants completed the Principal Self-Efficacy Survey. Three questions were addressed: (a) the relationship between principal self-efficacy beliefs and various demographic factors; (b) differences between perceived beliefs and actual practices of principals; and (c) outcome expectancy for principals to facilitate effective teaching and learning at their respective schools. Findings indicate that, in general, principal self-efficacy beliefs tended to increase with the complexity of the job; principals spend a significantly greater amount of time in management as compared to facilitating instructional effectiveness; and an overwhelming majority of the principals felt their efforts to facilitate an effective teaching and learning environment were productive. Implications include the placement of principals at compatible schools and exploration of self-efficacy in professional development.

## Effective Teaching and Learning Environments and Principal Self-Efficacy

Public concern about the quality of education in America has sparked increased interest in holding schools accountable for the outcomes of the education they provide. This rising concern has put great pressure on school administrators to raise student scores on high stakes testing. With the implementation of No Child Left Behind (NCLB), school principals know that if their students do not make adequate progress on high stakes tests, parents will be offered the choice of enrolling their children in other schools.

School principals have a critical role in the conceptual framework of NCLB. Their behaviors are believed to be central to the creation and facilitation of an effective teaching and learning environment within a school. From a social cognitive perspective, behaviors are understood to be one component of a triadic, reciprocal model of human agency where the environment (E), personal factors (P), and behaviors (B) all exert bidirectional influences upon the other factors ([Bandura, 1997](#)). This relationship is represented in Figure 1.

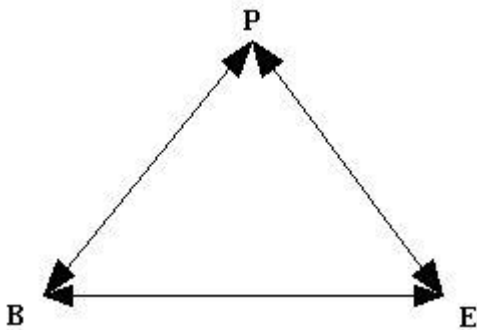


Figure 1. Triadic, Reciprocal Model of Human Agency

According to social cognitive theory, self-efficacy is a personal factor (P) that can have significant effect upon human agency. [Bandura \(1997\)](#) defines self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Self-efficacy beliefs influence the courses of action people pursue, effort exerted, perseverance in overcoming obstacles or failures, resilience to adversity, the extent to which thoughts are self-aiding or self-hindering when coping with environmental demands, and ultimately the level of accomplishments realized ([Bandura, 1997](#)). Self-efficacy is, therefore, an important construct useful for understanding a broad spectrum of human behavior in various social contexts.

Social cognitive theory also provides a theoretical framework for understanding how strength of self-efficacy beliefs and outcome expectancies interact to produce behavioral outcomes. Figure 2 provides a matrix describing expected behavioral outcomes for various levels of strength of self-efficacy beliefs and the value of the outcome.

Figure 2. Interactions of Self-Efficacy Beliefs and Outcome Expectancies

	+ <i>Outcome expectancy</i>	- <i>Outcome expectancy</i>
Self-efficacy	Productive engagement	Grievance
Self-efficacy	Stress	Apathy

As can be seen in the table, high self-efficacy for a task with a positive outcome expectancy is expected to facilitate productive engagement. High self-efficacy coupled with a low outcome expectancy would be likely to facilitate protest or grievance. Low self-efficacy for a task that is perceived to be important creates stress while low self-

efficacy for an outcome that is not valued is likely to facilitate apathy. It is important to recognize that, when considered independently, self-efficacy beliefs are better predictors of behavior than outcome expectancies ([Bandura, 1997](#)).

A review of extant literature on teacher and student self-efficacy reveals a large body of empirical studies (e.g., [Pajares, 1996](#); [Parker, Guarino, & Smith, 2003](#); [Tschannen-Moran, Hoy, & Hoy, 1998](#)). On the other hand, research into the self-efficacy beliefs of school administrators regarding their ability to create and facilitate effective instructional environments has not enjoyed as much attention. An extensive literature review was undertaken using various descriptors such as “principals,” “self-efficacy,” “instructional effectiveness,” and “academic achievement.” Abstracts for all studies identified in the search were analyzed, revealing a minimum number of related studies ([DeMoulin, 1992](#); [Hillman, 1984](#); [1986](#)).

The scholarship of [Oplatka](#) (2004) views self-efficacy particularly regarding instructional leadership as a function of career stage. According to [Oplatka](#), middle and later career principals have higher self-efficacy for instructional leadership. Furthermore, no known empirical studies have been conducted which link self-efficacy beliefs of principals with the outcome expectancy of facilitating an effective teaching and learning environment in schools. Given the primary importance placed upon instructional leadership from the principal in current school accountability models, such as No Child Left Behind, there is a need to build an empirical base of knowledge regarding their self-efficacy beliefs regarding facilitation of effective instruction.

### *Research Questions*

This study examined three research questions. The first research question explored the relationship(s) between nine demographic variables of the principal or school and principal self-efficacy beliefs. The demographic variables in this study were principal race (Caucasian, minority), gender, years in education, years as a principal at a particular school, total years as a principal, academic degree of the principal (master's, specialist, or doctorate), number of students enrolled at principal's school, percent of students on free/reduced lunch, and location of the school (urban, suburban, or rural). Assessment of principal self-efficacy beliefs was made using the Principal Self-Efficacy Survey (PSES).

The second research question examined if there were significant differences between perceived beliefs and actual practices of principals. This research question was addressed by the second part of the PSES that asked principals to report the amount of time spent per week on items related to the two factors of Instructional Effectiveness and Management Skills. The final question on the PSES asked principals to provide an outcome expectancy for their efforts to facilitate effective teaching and learning at their schools.

## Method

### *Procedure*

School superintendents were queried by e-mail regarding their interest in having principals from their system involved in the study. Those agreeing to have their system's principals participate in the study were mailed survey packets for their principals. Respondents to the surveys were supplied envelopes to ensure anonymity. Each system

then returned their surveys in one packet. Codes were used to sort data by school system and to identify participants' demographic characteristics.

### *Sample*

Two hundred eighty-four principals returned completed and valid surveys representing twelve states (5 in the Southeast, 2 in the Midwest, 2 in the West, 2 in the Northeast, and Alaska). There are 74 elementary schools, 30 middle schools, and 31 high schools represented in this study. The gender of respondents consisted of 66% males and 34% females. Ethnic representation included 83% White, 14% Black, and 3% other. Nearly 47% of the respondents indicated that they have a master's degree plus 30 hours, and approximately 10% of respondents have an earned doctorate. The majority of the responses (54%) came from rural schools, while 17% were from suburban schools and 25% were from urban schools

### *Instrumentation*

The Principal Self-Efficacy Survey (PSES) is divided into three main sections. The first section is a fourteen-item inventory assessing principal self-efficacy in two domains (Instructional Leadership and Management Skills). Confirmatory factor analysis of this section of the survey yielded acceptably high goodness of fit indices (i.e., > .99) for both the Comparative Fit Index (CFI) ([Bentler, 1990](#)) and the Tucker-Lewis Index (TLI) ([Bentler & Bonett, 1980](#)). The population discrepancy measure used in this study was the Root Mean Square Error of Approximation (RMSEA) ([Browne & Cudeck, 1993](#)). The RMSEA achieved a value of .049 indicating a close fit between the sample coefficients and the estimated population coefficients. The correlation between the two factors is .69, demonstrating discriminant validity.

Internal consistency was also measured using Cronbach's alpha with coefficients of .86 and .74 for Instructional Leadership and Management Practices, respectively.

[Smith and Guarino \(2005\)](#) provide a full explanation of the development of the PSES and its psychometric properties.

The second portion of the PSES contains eight items related to the amount of time principals spend during a week on typical activities. These questions also had a two-factor solution with Instructional Leadership (4 items) and Management Practices (4 items) representing the latent constructs.

The last section of the PSES asked principals to rate their beliefs regarding the effectiveness of their efforts to facilitate effective instruction in their schools. The choices given for this item were designed to correlate with the matrix in Figure 2 (i.e., productive engagement, grievance/protest, stress, apathy). The full measure can be found in Appendix A, Principal Self-Efficacy Survey.

## Results

Four separate stepwise regression analyses were conducted to identify the most important variables in predicting the four criteria variables: (1) self-efficacy in instructional leadership, (2) self-efficacy in management, (3) reported time devoted to instructional leadership, and (4) reported time devoted to management. A stepwise approach was used whereby predictors were selected in order of importance with both entry and removal of variables possible at each step. The predictor variables for the four analyses were: (1) gender, (2) number of years as an educator, (3) number of years as a principal at the current school, (4) number of years as a principal, (5) number of students at the school, and (6) percent of students on free/reduced lunch.



*Regressions*

*Self-Efficacy in Instructional Leadership.* The first stepwise regression analysis (predicting self-efficacy in instructional leadership) yielded  $R^2 = .145, p < .001$ . Variables that were significant in this equation were gender (beta = .286,  $p < .001$ ), free/reduced lunch (beta = .195,  $p = .001$ ) and number of students (beta = .154,  $p = .009$ ). Females scored higher on self-efficacy in instructional leadership than males, principals working at schools with a higher proportion of free/reduced lunch scored higher than principals working at schools with a lower proportion of free/reduced lunch, and principals working in larger schools scored higher on self-efficacy than principals working in smaller schools.

*Self-Efficacy in Management.* The second stepwise regression analysis (predicting self-efficacy in management) yielded  $R^2 = .196, p = .017$ . The only variable that reached significance was free/reduced lunch (beta = .177,  $p = .046$ ). Principals working at schools with a higher proportion of free/reduced lunch scored higher on self-efficacy in management than principals working at schools with a lower proportion of free/reduced lunch.

*Reported Time Devoted to Instructional Leadership.* The third stepwise regression analysis (predicting reported time devoted to instructional leadership) yielded  $R^2 = .156, p < .001$ . Variables that were significant in this equation were gender (beta = .261,  $p = .002$ ), and free/reduced lunch (beta = .320,  $p < .001$ ). Females scored higher on time devoted to instructional leadership than males and principals working at schools with a higher proportion of free/reduced lunch scored higher on self-efficacy in

instructional leadership than principals working at schools with a lower proportion of free/reduced lunch.

*Reported Time Devoted to Management.* The fourth stepwise regression analysis (reported time devoted to management) yielded  $R^2 = .051$ ,  $p = .002$ . The variable that was significant in this equation was number of years as a principal (beta =  $-.274$ ). Principals with more experience reported less time devoted to management. The effect size for this variable is minimal, explaining about 5% of the variance.

#### *Analysis of Variance*

In order to determine whether significant differences existed between the percent of time principals reported in instructional and management practices a one-way within-subjects ANOVA was conducted. A significant difference was found with principals reporting they spent significantly more time on management practices ( $M = 2.14$ ,  $SD = .61$ ) than instructional practices ( $M = 1.83$ ,  $SD = .61$ ),  $F(1, 266) = 51.31$ ,  $p < .001$ ,  $R^2 = .162$ . This finding is not unique, (e.g., [Amadeo & Taylor, 2004](#); [Barnett, 2004](#)). However, given efforts to reconceptualize the principalship, this finding demonstrates that management demands continue to pervade the job.

#### *Outcome Expectancy*

The final question on the Principal Self-Efficacy Measure asked respondents to pick the one best answer that described the expected outcome of their efforts to facilitate an effective teaching and learning environment at their school. Only two respondents indicated time spent in improving teaching and learning at their school makes little difference and leaves them feeling discouraged and/or depressed, while 226 (80%)

indicated their efforts were generally productive and worthwhile. The remaining 56 respondents (20%) indicated their belief in their ability to improve teaching and learning in their school, but contended that their efforts to do so were hampered by policy or other impediments.

### Discussion

It is important to note that 226 participants in the study reported active engagement in facilitating positive outcome expectancies for teaching and learning at their school. Fifty-six respondents reported they have the ability to facilitate effective teaching and learning, but there are external variables hindering their efforts. Only two principals said that they had serious doubts about their ability to create the desired outcome, and no one indicated that they had given up entirely on the endeavor.

The overwhelmingly positive response to the outcome expectancy of actions provides strong evidence that the principals participating in this study are having their self-efficacy beliefs reinforced through the attainment to some degree of valued outcomes relative to improving teaching and learning at their schools. Given the central role of principals as change agents in current school accountability models, this is good news indeed, and it forms the conceptual basis for the remainder of the discussion.

Regression analyses indicate several trends that suggest, on the whole, favorable relationships between many of the study variables and reported self-efficacy beliefs of principals. For example, principals working with higher proportions of free/reduced lunch populations reported significantly higher self-efficacy beliefs for instructional leadership. The same trend was found also when school size was regressed against principal self-efficacy beliefs.

Findings such as these are important, given the high correlation between free/reduced lunch and educationally disadvantaged students. For instance, [Bobbett \(2001\)](#) reports that over 66% of the variance in school performance scores in Louisiana's high stakes can be explained by socioeconomic status. Bobbett's findings are in general agreement with extant literature documenting an achievement gap in students (e.g., [Jencks & Phillips, 1998](#)) and suggest that schools with high percentages of free lunch students would be likely to benefit from principals with higher levels of self-efficacy for instructional leadership. These principals would be more apt to spend extra time on matters related to instructional leadership and in these matters expend greater amounts of energy, persevere longer, and bounce back from failure more quickly in the face of obstacles.

A similar trend was found when school size was regressed against principal self-efficacy beliefs. Principals working in larger schools reported significantly higher self-efficacy scores for instructional leadership when compared to the entire sample. Larger schools would be expected to provide more complex organizational challenges and likewise would be expected to place more stringent demands upon principals. If this is the case, principals working in larger schools would be well-served by accurate self-efficacy beliefs about their actual capabilities to plan and to execute courses of action necessary for the effective and efficient operation of the school plant. Interestingly, female principals reported significantly higher self-efficacy for instructional leadership. Several possible explanations come to mind to explain this finding. For example, until recent times, males have primarily filled the principalship. An attribute of female principals might be higher strength of self-beliefs in their abilities since this would be

expected to be a critical factor in overcoming mindsets that might favor males for principal positions. Whatever the reason for this finding, future research is needed before any firm conclusions can be drawn.

When time devoted to instructional leadership is considered, the findings corroborate those above. For example, females reported spending more time in the area of instructional leadership than males, and principals with higher percentages of free and reduced lunch reported similar practices.

Analysis of reported self-efficacy in management skills produced one significant predictor. Principals with higher proportions of free and reduced lunch reported significantly higher levels of strength of beliefs for the management skills factor. This finding, like those for instructional leadership may provide further evidence that principals responding to this survey are working in environments that are contextually appropriate to their self-beliefs.

There are several potential explanations why principals in schools with higher levels of free and reduced lunch students are reporting higher levels of beliefs in their management skills. Among the possibilities is the likelihood that higher levels of free and reduced lunch students are correlated with increased managerial demands. If this is the case, this is further evidence that the beliefs of the principals in the study are appropriate to their job context. Predictably, principals reported a significantly greater amount of time devoted to management practices when compared to instructional practices. According to the study, principals are spending more time meeting with parents, dealing with discipline, completing paperwork, and attending school activities than with instructional practices. This is noteworthy given the importance placed upon

instructional leadership in school accountability models, and poses an interesting problem for further study. At the present time it appears that principals are operating as managers first and instructional leaders second.

### *Implications*

This study begins to build a base of knowledge that relates the self-efficacy beliefs of principals to their day-to-day practices. A clear understanding of this relationship has implications for both policy and practice. As more knowledge is developed it can be used in areas such as principal certification, ongoing professional development, and administrator licensure. This knowledge can also be useful in identifying viable principal candidates, matching candidates to jobs, and recognizing principals likely to burn out as well as those who would serve well as mentors to others.

In addition to the implications listed above, results obtained from the PSES would be expected to be a useful component in developing a richer understanding of a school's effectiveness when analyzed with other constructs known to be important to effective schools. For example, examination of relationships between the PSES with factors such as school culture, teacher satisfaction, teacher self-efficacy, and teacher retention would serve to broaden the conceptual and practical understanding of the relationships that exist between these constructs.

### *Suggestions for Future Research*

Additional research that investigates why principals spend the majority of their time in management roles is recommended. Future investigations should attempt to determine if principals feel the amount of time they are devoting to instruction is

appropriate or needs to be increased. In the same light, it is also important to determine if the time devoted to management is appropriate or if there is a sense that day-to-day management needs block principals from spending more time in the area of instructional leadership.

Influences of gender and experience invite further investigation. Female principals reported significantly higher self-efficacy for instructional leadership than did males. Future research could investigate whether female principals perform better in instructional leadership than management. The results of our study suggest that principals with higher levels of self- efficacy are more often found in complex jobs. If this is so, is it because of self-selection or a district matching a good leader with a challenging placement?

Future research is also called for to see if the results of the study replicate. A larger sample would allow for disaggregation by school level and geographic area and would enhance the contextual richness of any findings. Furthermore, additional research would benefit from mixed methodology where quantitative data could serve as the basis for qualitative fieldwork. Focus groups would also be expected to provide a fuller understanding of how principal self-beliefs are related to their actual practices. Finally, correlating responses of teachers regarding their beliefs for their school principal's ability to facilitate instructional effectiveness and to demonstrate management skills would provide an interesting comparison of principal and faculty perceptions regarding the effectiveness of their principal in these areas.

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APPENDIX A: PRINCIPAL SELF-EFFICACY SURVEY

PRINCIPAL SURVEY

1. Gender School Number \_\_\_\_\_  
 M  
 F
2. Ethnicity  
 Asian  
 African American  
 Hispanic  
 White  
 Other: \_\_\_\_\_
3. Total number of years as a professional educator (including this year) is: \_\_\_\_\_
4. Total number of years as the head principal at this school (including this year) is: \_\_\_\_\_
5. Total number of years as a head principal (including this year) in your career is: \_\_\_\_\_
6. Number of students in your school: \_\_\_\_\_
7. Highest degree completed:  
 Bachelor  
 Master  
 Master +30/specialist  
 Doctorate
8. I serve at:  
 elementary  
 middle school  
 high school  
 alternative school grade level(s) served: \_\_\_\_\_  
 other
9. My school is:  
 public  
 private  
 charter  
 other
10. Percentage of students on free or reduced lunch:  
\_\_\_\_\_
11. My school is:  
 Rural  
 Urban  
 Suburban

Definition

This principal survey asks you to make a series of judgments about your experiences as a head administrator for a school.

Instructions

You are asked to read the following items and rate the strength of your beliefs in your abilities to attain the following outcomes. These items should be answered from your perspective as a school principal working to produce an effective teaching and learning environment. You are to indicate the degree to which you agree or disagree with each statement by darkening the appropriate oval.

Scale 1=Very Weak Beliefs in My Abilities (VW)  
2=Weak Beliefs in My Abilities (W)  
3=Strong Beliefs in My Abilities (S)  
4=Very Strong Beliefs in My Abilities (VS)

STATEMENTS:

My beliefs in my abilities to...

1. influence teachers to utilize effective teaching and learning practices are
2. provide effective modeling for teachers regarding effective teaching and learning practices are
3. use research on teaching and learning to guide strategic planning for accomplishment of school goals are
4. plan effective activities and experiences which facilitate teachers' beliefs in their abilities to provide effective teaching and learning activities to their students are
5. use data collected from teacher observations to inform school-wide efforts for improving teaching and learning are
6. regularly perform effective observations of teachers are
7. stay abreast of current best practices for facilitating effective teaching and learning are
8. communicate needs and goals necessary to enhance effective instructional effectiveness to faculty are
9. provide experiences that foster and facilitate high levels of teacher motivation towards teaching and learning are
10. protect instructional time so that effective teaching and learning can take place
11. facilitate an atmosphere that provides fair and consistent discipline for all students are
12. maintain healthy school/community relations are
13. maintain a school-wide atmosphere that is conducive to teaching and learning are
14. buffer teacher from unnecessary paperwork

Answer items 15-22 in terms of the amount of time spent per week on the following activities.

- Scale:
- 1=Less than 10%
  - 2=Between 10% and 30%
  - 3=Between 30% and 50%
  - 4=More than 50%

- 15. Classroom observations
- 16. Follow-up to classroom observations (e.g., teacher conferences)
- 17. Meetings with parents
- 18. Dealing with discipline
- 19. Completing paperwork
- 20. Attending seminars for personal and professional growth
- 21. Attending school activities (e.g., ball games, concerts, etc)
- 22. Planning professional activities that enhance teaching and learning at your school
- 23. Which of the following best expresses your beliefs regarding your ability to facilitate effective teaching and learning at your school?
  - (a) The time I spend engaged in improving teaching and learning at my school is generally productive and worthwhile
  - (b) The time I spend engaged in improving teaching and learning at my school is hampered by policy and/or other impediments
  - (c) The time I spend engaged in improving teaching and learning at my school makes little difference and leaves me feeling discouraged and/or depressed
  - (d) I have quit spending much time attempting to facilitate instructional effectiveness because the efforts do not make a difference