Rural Principal Leadership Skill Proficiency and Student Achievement
Sue Erwin, Tarleton State University
Pam Wina, Tarleton State University
John Erwin, Tarleton State University
Jim Gentry, Tarleton State University
Mary Cauble, Tarleton State University

Preparing Aspiring Superintendent to Lead School Improvement: Perceptions of Graduates for Program Development
Pauline M. Sampson, Stephen F. Austin State University
Betty J. Alford, Stephen F. Austin State University
Ralph L. Marshall, Stephen F. Austin State University

An Investigation of Principals' Use of Data in Data Driven Decision Making and the Impact on Student Achievement
Jimmy K. Byrd, University of North Texas
Colleen Eddy, University of North Texas

Professional Learning Communities: Are Schools Ready to Collaborate to Educate?
Rachel Hawkins, Waskom ISD
Jason R. Mixon, Lamar University
Journal Dedication – Lee Stewart, Stephen F. Austin State University

Dr. Lee Stewart was a member of the Stephen F. Austin State University's faculty for five years. He served as assistant professor teaching courses in the principal preparation and doctoral programs. He taught all courses in the principal preparation program and received excellent course evaluations. During spring 2008, he became a member of the Doctoral Council and taught the course Designing Research in Educational Settings. Again, Dr. Stewart's work was highly appreciated by his students. Dr. Stewart completed his undergraduate and master's degrees at SFA and his doctoral degree at Baylor University. He received the Teaching Excellence Award for the department at SFA. He was instrumental in the development of the online principal preparation program and worked as a team leader for professional development for three years, working with a U.S. Department of Education grant to prepare principals for high-need schools. Dr. Stewart developed the Project DEVELOP newsletters and online surveys of participants, as well as assisted with the overall implementation of the grant. He was a faithful member of the SFA Phi Delta Kappa Chapter, the University Faculty Senate, and the NCATE steering committee. He worked long hours in service for this university, college and department. As a member of the National Council of Professors of Educational Administration, Dr. Stewart served as one of the registrars for the summer conference in San Antonio. He was loved by colleagues, students and friends and will be remembered for the many ways that he exemplified servant leadership, by his boundless energy and tenacity for every task, by his warm and outgoing personality, and by his commitment to excellence. Dr. Stewart is survived by his wife, Dr. Sandra Stewart, also a member of the SFA faculty.

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The next issue of School Leadership Review will be published in Fall 2010.
The theme for the Fall 2010 issue will be open.

Submission Guidelines
- Submissions should be around 20 pages in length.
- Manuscripts must include cover page with contact information.
- Manuscripts may be submitted at any time.
Submit manuscripts electronically in Word to ngill@uttyler.edu and whickey@uttyler.edu.
Rural Principal Leadership Skill Proficiency
And Student Achievement

Sue Erwin, Tarleton State University
Pam Winn, Tarleton State University
John Erwin, Tarleton State University
Jim Gentry, Tarleton State University
Mary Cauble, Tarleton State University

Literature related to the rural principalship focuses on three challenges (Winn, Erwin, Gentry, & Cauble, 2009a): retention of effective principals, community relations, and pressure to meet standards with limited resources. While there is a great need for effective, skilled leaders in rural schools, recruiting and retaining quality principals is a challenge. Administrative stability, a factor related to student achievement (Partlow & Ridenor, 2008), might account for lower academic achievement in rural and urban schools (Provasnik, KewalRamani, Coleman, Gilbertson, Herring, & Xie, 2007). Principal turnover rates in rural schools are comparable to those of urban schools (Bainbridge, Lassley, & Sundre, 2003; Balfanz & MacIver, 2000).

However, rural principals are generally paid less, asked to assume a greater number of responsibilities, and face greater community scrutiny than their urban and suburban counterparts (Winn et al., 2009a, 2009b; Arnold, Gaddy, & Dean, 2004). Community resistance, geographic isolation, and economic shortages also create difficulties when rural principals implement special education services (Cruzeiro & Morgan, 2006). The demands of finding and retaining highly qualified teachers (HQT), who can teach multiple subjects and assure adequate yearly progress (AYP) for students in special education, add to the challenges of rural administrators (Mitchem, Kossar, & Ludlow 2006; Jimerson, 2005). Furthermore, community resistance and lack of population diversity often impede the efforts to implement multicultural education in rural schools (McCray, Wright, & Beachum, 2004).
Leadership and Rural School Success

As noted by Winn, et al. (2009a), twenty five years of educational research (Marzano, Waters, & McNulty, 2005; Lesotte, 1992, 1991; Reynolds, 1990; Edmonds, 1979), establishes quality school leadership is essential for rural public school success. School leadership is second only to classroom instruction in influencing student achievement (Leithwood, Louis, Anderson, & Wahlstrom, 2004). Furthermore, countries worldwide have recognized that as school administrator responsibilities expand, the need to cultivate school leadership increases (Olson, 2008). Among rural principals, unique community characteristics may also require different leadership skills.

Purpose of the Study

Warren and Peal (2005) found that rural schools can effectively develop focused leadership support and training. However, as indicated by Arnold, et al. (2004), the knowledge and skills most critical to effective rural administration have yet to be identified. Targeting specific leadership skills related to student achievement might focus university principal preparation programs and public school district staff development programs on producing more effective rural leadership. Ultimately, this emphasis may improve student achievement and school performance in rural schools.

Because of the importance of developing highly skilled rural school leaders, this study will endeavor to identify the leadership skills of practicing rural administrators and determine whether these skills were related to campus student achievement.

Review of Literature

Rural School Challenges

Rural principals work in schools that are demographically different than those in urban and suburban communities (Winn et al., 2009a). Data collected from 2002-2005 by the National Center for Education Statistics (NCES) show that a third of all public schools are located in rural areas, but their enrollment represents only one fifth of the nation’s public school student population. Additional findings indicate that rural schools enroll a larger percentage of White or American Indian/Alaska Native students and a smaller percentage of Black, Hispanic and Asian/Pacific Islander students than do urban or suburban schools. Likewise, a smaller percentage of rural school teachers are racial/ethnic minorities. Native English speakers are found in greater percentages in rural than in either suburban or urban schools. Economically, NCES found 38% of rural students attend moderate-to-high poverty schools as compared to 45% of urban students (Provasnik, et al., 2007).

Rural communities generally offer fewer educational opportunities for students. For instance, fewer rural students per capita attend prekindergarten classes and schools are less likely to have advanced placement, International Baccalaureate courses, or Internet access. Nevertheless, according to NCES data, academically, rural students outscored urban children on National Assessment of Educational Progress (NAEP) assessments while rural students scored below suburban students. In addition, rural students' freshman graduation rate (75%) is higher than that of urban students (65%), but lower than that of suburban students (79%), while dropout rates in rural schools (11%) are higher than suburban (9%) and lower than urban (13%) rates (Provasnik, et al., 2007).
Rural schools receive a smaller percentage of revenue from the federal government, yet spend more per student than either urban or suburban schools. Rural schools are more likely to have a smaller ratio between students and teachers, counselors, social workers, and special education specialists. There are fewer serious student behavior problems per capita and a larger percentage of teachers report satisfaction with teaching conditions in rural schools. In addition, rural parents are more likely to attend rural school events and take their children to athletic events (Provasnik, et al., 2007).

Rural parents are more likely than urban or suburban parents to have completed a high school diploma as their highest educational attainment. On the other hand, parents of rural school children (as compared to urban and suburban parents), are more likely to expect a bachelor’s degree as their children’s highest educational attainment. Despite these expectations, NCES reports that only 13% of rural residents acquire bachelor’s degrees (as their highest educational attainment) compared to 17% nationally (Provasnik, et al., 2007).

As the NCES data clearly show, rural campuses are unique (Winn, et al. 2009a). Because their roles and challenges are different, rural school principals may require specialized leadership skills that differ from those required of their urban and rural counterparts.

**Principal Effect on Student Achievement**

Studies in the U.S. from the last 40 years overwhelmingly support the notion that if a school has an effective principal, students are more likely to achieve academically (Cotton, 1995; Lezotte, 1992). A review of studies conducted worldwide (Hallinger & Heck, 1996) found similar results. In a definitive review of thirty years of research on the role of the principal in student achievement, Marzano et al. (2005) found both a practical and statistical significance in the relationship between student achievement and the quality of school leadership.

The importance of effective leadership is also recognized within the public school community, in spite of difficulty in identifying and assessing the composite required skills. According to Rammer’s (2007) findings, superintendents recognize the crucial role effective principals play in the development of schools even though they have no effective means of assessing those skills in potential administrative candidates. Likewise, Hallinger, Bickman, and Davis (1996) report that parents and teachers believe principals make a difference in the achievement of students and the learning environment.

Findings from these studies suggest that even when it is difficult to discern which skills are requisite to effective leadership, there is little doubt among researchers or stakeholders that effective leadership positively affects student achievement.

**Principal Skill Assessment**

Review of research reveals that principal effectiveness is important, yet there is no consistent or formalized method for identifying the most highly skilled principals (Winn, et al., 2009a, 2009b). As noted in Rammer’s (2007) study for example, superintendents’ belief in the value of a particular leadership characteristic does not guarantee that they have available tools to correctly assess these skills in potential employees. Adding to the complexity of assessment, findings from a study of new principals (Daresh, 2007) suggest it is not until principals become comfortable with the management of the school that they begin to consider critical instructional issues.

New principals are likely to assess their own performance primarily in terms of management skills. Baxter (2008) posits this may result from university-based principal preparation programs that apply a business manager metaphor to public school administration rather than one of community leader and public servant. Adding to the complexity of principal
assessment, Anagnostopoulos and Rutledge (2007) found when schools face state and district sanctions for low performing schools, sanctions rather than best practice become the focus of school administrators. Additional findings suggest that, in this atmosphere, administrators are more likely to resort to top-down managerial skills rather than collaborative instructional leadership skills. Another disconnect from instructional leadership may result from fewer (from 15% to 5%) principals coming to administration directly from the classroom ("The Changing Face Of Principals", 2008).

The convergence of these factors does little to guarantee quality leadership or stem rural school failure. In spite of overwhelming evidence of the essential role played by principals in creating effective schools, measuring leadership effectiveness has not been adequately formalized either by rural school districts or by rural principals. The following study attempted to identify the relationship between the leadership skills of rural principals and campus student achievement as measured by state accountability ratings.

**Method**

Until July 2009, Texas principals were required to participate in a state-approved professional development performance assessment every five years. Records from one such assessment, Principal Assessment of Student Success (PASS), provided the data for this study (see Appendix A). One component of the PASS assessment required school administrators to rate themselves on leadership knowledge and skills (see Appendix B) identified by Thompson (1993) and adopted by the National Policy Board of Educational Administration (NPBEA).

PASS principal self-ratings from 2006 to 2008 were used in this study to determine which NPBEA skills predominated among practicing Texas rural administrators.

In another component of PASS, sampled principals were assessed on the NPBEA skills by two person assessor teams recruited among veteran campus and central office administrators and university educational leadership departments within the state of Texas. Based upon evidence provided by principals (campus improvement plan, state accountability data, Adequate Yearly Progress, phone interview, teacher performance data, and student performance data), assessor teams cooperatively identified each rural principal’s NBPEA leadership strengths.

Finally, to identify the relationship between rural principal leadership skills and campus student achievement, the top five NBPEA skills identified by sampled principals and their PASS assessors teams were compared within three campus student achievement categories as measured by Texas campus accountability ratings (see Appendix C; Academically Acceptable = lowest passing rate; Recommended = moderate passing rate; Exemplary = highest passing rate).

**Participants**

PASS data accessed from principal assessments conducted throughout Texas from 2006 through 2008 yielded records of 259 rural school principals, representing 41.7% (108) elementary, 24.3% (63) middle, and 34% (88) high school campuses (see Appendix D). Principals sampled represented campuses at each instructional level (high school, middle school and elementary school):

- Academically Acceptable (AA) with 53.1% (76), 28% (40), and 18.9% (27), respectively;
- Recognized (R) with 11.5% (11), 24% (23), and 64.6% (62), respectively; and
- Exemplary (E) with 5% (1), 0%, and 95% (19), respectively.

Unequal representation of schools at each instructional level (high school, middle school, and elementary school) within each state accountability level (AA, R, E) may be a limitation of
this study’s findings. However, the dispersion of these data reflects the pattern of accountability ratings in Texas. Overall, rural campuses rated Academically Acceptable (AA) were associated with 143(55.2%) of sampled principals, the largest group, while rural campuses rated Recognized (R) and Exemplary (E) were associated with 96(37.1%) and 20(7.7%) sampled principals, respectively.

Analysis

Descriptive statistics were used to calculate principal and PASS assessor rankings. Chi-square cross tabulation tables were used to determine dependence/independence by school accountability ratings and principal’s NBPEA skill ranking frequency counts per NBPEA domain. Only significant differences were reported.

Results

Principal Self-Rankings of NBPEA Functional Domain Skills

Sampled principals (n=259) ranked themselves on NBPEA functional domain skills (Leadership, Information Collection, Problem Analysis, Judgment, Organizational Oversight, Implementation, and Delegation) using a seven point scale. Ranks were categorized as Less Confident (ranks 5-7), Confident (rank 4), or Most Confident (ranks 1-3) and sorted by campus state accountability ratings (AA, R, and E) as seen in Appendix E.

Frequency count averages indicate sampled principals assessed their skills as Most Confident, rather than Less Confident, regardless of their campus accountability rating. Skill ranking levels (Less Confident, Confident, Most Confident) across campus accountability ratings (AA, R, and E) also manifested similar frequency count patterns per NBPEA skill (see Appendix E). With the exception of Organizational Oversight and Information Collection skills, each remaining NBPEA functional domain skill was ranked Most Confident per Texas accountability rating (AA, R, E). Likewise, Organizational Oversight and Information Collection skills were ranked Less Confident among all campus accountability ratings (AA, R and E) as noted in Table 1.

Table 1

Differences among Rural Principals an NPBEA Skills by Campus Accountability Rating (AA, R, E)

<table>
<thead>
<tr>
<th>NPBEA Domain</th>
<th>NPBEA Skill</th>
<th>Less Confident</th>
<th>Confident</th>
<th>Most Confident</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Leadership</td>
<td></td>
<td></td>
<td>AA, R, E</td>
</tr>
<tr>
<td></td>
<td>Information</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional</td>
<td>Problem analysis</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domain Skills</td>
<td>Judgment</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organizational</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oversight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Instructional</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Curriculum</td>
<td>AA, R, E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programming</td>
<td></td>
<td></td>
<td>AA, R, E</td>
</tr>
<tr>
<td></td>
<td>Student Guidance</td>
<td></td>
<td></td>
<td>AA, R, E</td>
</tr>
</tbody>
</table>
was ranked Confident by AA and R campus principals, whereas principals at E rated schools ranked this skill Less Confident (see Table 1).

Principal Self-Rankings of NBPEA Interpersonal Domain Skills

Principals ranked themselves on the NBPEA interpersonal domain skills (Sensitivity, Oral and Nonverbal Expression, Written Expression, and Motivation of Others) using a four point scale. Principal rankings were categorized as Less Confident (ranks 3-4) or Most Confident (ranks 1-2) across the four domain skills (see Appendix G). Total count averages by ranking level per NBPEA interpersonal domain skill differed little by campus accountability level. Chi-square comparisons between campus accountability ratings and NBPEA interpersonal domain skill frequency counts proved non-significant for all domain skills except Motivation of Others in a (2X3) cross-tabulation. Ranking of Motivation of Others differed between AA rated campuses and R and E rated schools; AA rankings were higher than the others (See Appendix G).

Differences between the principal rankings and campus accountability ratings were statistically significant, $\chi^2(2, N = 254) = 22.157, p = .000, \phi_c = .30$. The moderate/medium effect size $.30$ (Rea & Parker, 1992; Evans & Rooney, 2007) suggests 30% of the variance in principal ranking (i.e., Less Confident or Most Confident) of Motivation of Others could be accounted for by campus accountability rating. Principals who reported Most Confident rankings of Motivation of Others were more often from AA rated schools while principals with lower rankings were more likely from schools rated as R or E; the lower the campus accountability rating the higher the ranking of Motivation of Others.

NBPEA interpersonal domain skills garnered the greatest differences among principal rankings per accountability level. The only skill in this domain ranked consistently (Most Confident) across accountability levels was Sensitivity (see Table 1). Conversely, Oral and
Nonverbal Expression varied within each school rating (AA = Least Confident; R = no difference; E = Most Confident). Principal rankings of Written Expression also differed by campus accountability rating (AA and R = Less Confident; E = Most Confident). Motivation of Others found AA and R rated campus principals Most Confident while E rated campus leaders unanimously ranked Motivation of Others Least Confident (see Table 1).

PASS Assessor Ratings of Principal NPBEA Skills

Teams of two PASS assessors cooperatively rated the NPBEA skills of each principal based upon data from multiple sources. A total of 714 ratings were produced by 259 assessor teams (three skills per principal; see Appendix H). In addition, the skill of Motivating Others (found statistically significant by principal self-rankings) was not rated by PASS assessors. Leadership produced the largest frequency count from assessors (137) while the lowest frequency count was found for Resource Allocation (13), a difference of 124 counts (See Table 2). Skills in NPBEA’s functional, programming, and interpersonal domains differed in frequency with 365/51%, 204/28.5%, and 145/20.3%, respectively. Functional domain skills netted greater totals than skills in the programming and interpersonal domains by 22.5% and 30.7%, respectively. Overall, within the functional domain, Leadership received the largest count while the highest counts in the programming and interpersonal domains were found for Instructional Management (57) and Sensitivity (91) see Appendix H.

<table>
<thead>
<tr>
<th>NBPEA Domains</th>
<th>Skills</th>
<th>(AA)</th>
<th>(R)</th>
<th>(E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functional</strong></td>
<td><strong>Leadership</strong></td>
<td>1</td>
<td>1</td>
<td>5-7</td>
</tr>
<tr>
<td><strong>Domain Skills</strong></td>
<td><strong>Information</strong></td>
<td>3</td>
<td>2</td>
<td>5-7</td>
</tr>
<tr>
<td></td>
<td><strong>Collection</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Problem Analysis</strong></td>
<td>11</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td><strong>Judgment</strong></td>
<td>8</td>
<td>5</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td><strong>Organizational</strong></td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Oversight</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Programming</strong></td>
<td><strong>Instructional</strong></td>
<td>5</td>
<td>6</td>
<td>9-11</td>
</tr>
<tr>
<td><strong>Domain Skills</strong></td>
<td><strong>Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Curriculum Design</strong></td>
<td>6-7</td>
<td>14</td>
<td>13-14</td>
</tr>
<tr>
<td></td>
<td><strong>Student Guidance</strong></td>
<td>6-7</td>
<td>14</td>
<td>13-14</td>
</tr>
<tr>
<td></td>
<td><strong>&amp; Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Staff Development</strong></td>
<td>12</td>
<td>10-11</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td><strong>Measurement &amp;</strong></td>
<td>10</td>
<td>12</td>
<td>13-14</td>
</tr>
<tr>
<td></td>
<td><strong>Evaluation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2

Texas Accountability Ratings [Academically Acceptable (AA), Recognized (R), Exemplary (E)] by Assessor Ratings of Principal NPBEA Skills (N = 259 assessor teams; 1=highest rating, 14 = lowest rating)
The five NBPEA skills with highest frequencies by campus accountability level were similar for the AA and R groups (AA = Leadership (71), Sensitivity (48), Information Collection (45), Organizational Oversight (37), and Instructional Management (34); R = Leadership (59), Information Collection (39), Sensitivity (36), Organizational Oversight (29), and Judgment (28; see Table 2 and Appendix H). Although ranked differently, both groups shared the same skills except for the exclusive skill of Instructional Management in the AA level, Judgment in the R level. Conversely, the assessors found the E campus leaders to be considerably different from the AA and R campus leaders with highest frequency counts for the skills of Student Guidance and Development (13), Organizational Oversight (11), both Staff Development and Judgment (8), while Leadership, Information Collection and Sensitivity followed with 7. While E campus leaders were noted for skills also exhibited by both AA and R principals, only E campus leaders demonstrated high degrees of Student Guidance and Development and Staff Development as rated by PASS assessor (see Appendix H and Table 3).

Comparison of Principal Self-Rankings and Assessor Ratings of NPBEA Skills by Texas Accountability Ratings

In order to identify the relationship between the leadership skills of rural principals and campus student achievement, NBPEA skills self-identified by sampled principals were compared to NBPEA skills identified by assessors within student achievement categories as measured by campus accountability ratings (AA, R, or E). Table 3 shows comparisons of the top NPBEA skills according to principal self-rankings and assessor ratings by campus accountability level. It should be noted that principals ranked their skills in subgroups determined by the three NPBEA domain groups, whereas assessors rated these 14 skills as a whole, not separated by domain. This difference accounts for seeming discrepancies reported in the frequency and percentages of E level principal ratings (see Appendixes G and H).

Table 3

Top NBPEA Skills: Principal and Assessor Ratings by Texas Accountability Ratings (AA, R E)

<table>
<thead>
<tr>
<th>(AA) Principal Self-ranking</th>
<th>(AA) Assessor Rating</th>
<th>(R) Principal Self-ranking</th>
<th>(R) Assessor Rating</th>
<th>(E) Principal Self-ranking</th>
<th>(E) Assessor Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Leadership</td>
<td>Leadership</td>
<td>Leadership</td>
<td>Leadership</td>
<td>Student Guidance &amp; Development</td>
</tr>
<tr>
<td>Judgment</td>
<td>Sensitivity</td>
<td>Judgment</td>
<td>Information Collection</td>
<td>Judgment</td>
<td>Organization Oversight</td>
</tr>
<tr>
<td>Motivating Others**</td>
<td>Information Collection</td>
<td>Sensitivity</td>
<td>Sensitivity</td>
<td>Oral</td>
<td>Staff Development</td>
</tr>
</tbody>
</table>
In the category of E rated campuses, assessors named Leadership and Judgment as strengths, conforming to principal rankings. However, although principals ranked themselves highest on these skills, assessors disagreed. For assessors, E campus principals were strongest in Student Guidance and Development, Organizational Oversight and Staff Development, while also exhibiting Information Collection and Sensitivity skills. Other skills highly ranked by principals, but not by assessors, were Oral Expression, Problem Analysis and Instructional Management (see Table 3).

In both AA and R rated campus categories, principal rankings and assessors ratings were more comparable. The only unique skill noted among these groups was Motivating Others, identified by AA principals. With the exception of Oral Expression, the principal-ranked NBPEA skills in the E campus category were similar to those of AA and R campuses. However, E rated campus assessor ratings included two NBPEA skills not found in either AA or R categories: Student Guidance and Development and Staff Development (see Table 3). This suggests rural school principals from E rated schools exhibit different skills than rural principals from AA and R rated campuses.

Conclusions

Even though effective leadership positively impacts student achievement, discerning the requisite skills of effective leaders has proven more elusive (Leithwood, et al., 2004; Cotton, 1995; Lezotte, 1992; Hallinger & Heck, 1996; Marzano et al., 2006). In this study, the NPBEA domain skill sets provide a context from which to compare PASS assessor ratings of rural principals in relation to their campus student achievement as measured by state accountability ratings. Each NPBEA domain (functional, programming, and interpersonal) reflects a particular
skill set. Before the findings of this study can be adequately discussed, a deeper understanding of the nature of the NPBEA domain skill sets is necessary.

Functional domain skills (see Appendix B) comprise base-level management and organizational structure to supervise daily, routine campus business (e.g. to run the buses on time, schedule classes, or maintain order). Evidence of effectiveness is, typically, quantifiably measurable (e.g. attendance records, disciplinary referrals). Programming domain skills (see Appendix B) provide systemic campus leadership requiring holistic perspectives that incorporate but surpass functional domain skills. More complex and difficult to quantify, these skills enable principals to develop frameworks, design anticipated outcomes, implement ongoing supervision, set goals, and draw inferences. In contrast, interpersonal domain skills (see Appendix B) employ functional and programming domain skills, but are subject to individual perception, making measurement more difficult. For example, principals may perceive themselves to be sensitive while faculty members disagree. Nevertheless, these skills improve effective implementation of both functional and programming skills.

Overall, assessor ratings of AA campus principals centered on skills related to management (functional domain) rather than collaborative systemic leadership (programming domain). The top assessor rated skills of AA campus principals from highest to lowest were: Leadership, Sensitivity, Information Collection, Organizational Oversight, and Instructional Management. Of these, three represent functional domain skills, while the other two represent programming and interpersonal domain skills.

Top assessor ratings of R campus principals from highest to lowest were: Leadership, Information Collection, Sensitivity, Organizational Oversight, and Judgment. Of these, four represent functional domain skills, while one represents an interpersonal domain skill. Of the 14 NPBEA skills measured, AA and R campus principals shared three functional domain skills (Leadership, Information Collection and Organizational Oversight) and one interpersonal domain skill (Sensitivity).

Anagnostopoulou and Rutledge (2007) contend that looming state and district sanctions for low student achievement tend to adjust principals' focus on the sanctions rather than best practice. In addition, when faced with performance pressure, administrators are more likely to resort to top-down managerial skills rather than collaborative instructional leadership skills ("The Changing Face of Principals", 2008). Findings from this study appear to support these arguments insofar as principals at lower rated schools appear to rely on managerial skills of the functional domain. However, principals differed in two skills: Instructional Management (AA) and Judgment (R). Interestingly, Judgment noted for R campus principals, suggests that student achievement may be linked to rural school leaders' ability to make quality data supported decisions. While rural principals at AA campuses appear to be skilled collectors of information, assessors found that principals at higher performing R campuses make quality decisions based on campus data (Judgment). This lends support to the truism that schools may be "data rich, but information poor". Professional development aimed at expanding skills of information collecting to include quality data-driven decision-making might, therefore, stimulate improved campus academic performance. As reflected in Instructional Management, the process of data-driven decision making may be skewed during the search for excellence by threat of sanctions associated with accountability. Principals, especially those of lower performing campuses, may feel compelled to monitor instruction more closely during their search for management solutions. However, without the presence of Judgment, principals may collect extensive data on classroom instruction but still not make quality decisions concerning campus improvement. The most
frequently noted assessor ratings for E campus principals from highest to lowest were: Student Guidance and Development, Organizational Oversight, Staff Development, Judgment, Leadership, Information Collection, and Sensitivity. Of these, four skills represented functional, two skills represented interpersonal, and one skill represented the programming domain skills. Student Guidance and Development and Staff Development were found exclusively among E campus principals while other skills attributed to E campus leaders were also exhibited by AA or R campus counterparts.

Programming skills like Student Guidance and Development and Staff Development may account for greater E campus student achievement, especially if leaders supervise faculty through more effective communication (e.g. providing clear instruction, guidance, training, and performance feedback). Most importantly, two of the top three strengths of E campus principals fell within the programming domains in contrast to functional and interpersonal skills found among top three ratings of AA and R campus leaders. These findings support those of Baxter (2008), Daresh (2007), and Anagnostopoulos and Rutledge, (2007) that quality school leadership appears to improve student academic performance. E campus principals in this study demonstrated a more systemic, collaborative leadership approach than AA and R campus leaders who focused on top-down management.

Comparison of Principal Self-rankings and Assessor Rankings

Comparison of assessor rankings to the principals' self-assessment rankings showed wide variation; thus providing the most relevant study finding. Assessors’ ratings for principals at AA and R campuses were similar with respect to skills, but not in the order of those skills. Four skills assessors found most frequently for AA and R campus principals were Leadership, Sensitivity, Information Collection and Organizational Oversight. Only Instructional Management (AA) and Judgment (R) differed in assessor rankings of these principals. Regardless of campus rating, all principals ranked Judgment as their second Most Confident skill; whereas, assessors selected Judgment as a skill only demonstrated by R or E campus principals. Judgment by definition indicates “logical conclusions and quality decisions” were made. Although people in leadership positions might understandably believe they possess Judgment, as noted in principal self-rankings, PASS assessors established Judgment skills based upon authentic campus evidence. Principal rankings at all campus accountability groups indicated strong skills in Judgment, but assessors deemed principals at campuses with higher accountability ratings to have stronger skills in Judgment. Perhaps, geographic isolation (Arnold et al., 2004) reduces diverse solutions to problems in rural schools; however, it is not clear why principals at E rated schools outperform those at AA and R campuses. E principals might have exposure to broader leadership networks, thus broadening their exposure to problem solving strategies and programs.

It should be noted that of the top four assessor rankings for AA and R campus principals, three fell within the functional domain, while one fell within the interpersonal domain. In contrast, assessor rankings of E campus principals listed two from the functional domain (Organizational Oversight and Judgment) and two from the programming domain (Student Guidance and Staff Development). While in the functional domain, Organizational Oversight and Judgment require the utilization of perspective rather than managerial skill. Furthermore, the programming skills of Student Guidance and Staff Development require setting priorities, reaching conclusions, making quality decisions, and utilizing resources. This finding supports a need for professional development for principals that builds skills beyond those in the functional domain and into the programming domain.
Recommendations

As noted in the review of literature, quality school leadership is second only to classroom instruction in influencing student achievement (Leithwood et al., 2004). More precisely, there is a need for professional development opportunities designed specifically for principals of rural campuses. Based on the findings in this study, rural principals who demonstrate skills in the programming domain tend to address campus instructional needs in a systemic manner utilizing collaborative leadership. Conversely, rural principals of lower performing campuses demonstrate skills in the functional domain supported by personal skills of the interpersonal domain. This supports conclusions from previous studies regarding the impact of campus leadership on student achievement (Daresh, 2007; Baxter, 2008; Anagnostopoulos & Rutledge, 2007).

Future studies examining principal attributes (i.e. gender, pre-administrative educational experience, leadership experience) that influence principals’ skills might further clarify differences among leaders from schools with different student achievement levels. Furthermore, differentiation of principals’ skills by campus level of instruction (i.e. elementary or secondary) might identify skills unique to student instructional level. Because Leadership was the top ranked skill by both principals and assessors, further study is needed to clarify the discreet skills that constitute Leadership and the degree to which these sub-skills vary among principals.

References


Appendix A  

Principal Assessment of Student Success (PASS)  

Principal Assessment for Student Success (PASS) is a principal assessment that has been approved by the State Board of Educator Certification (SBEC) for principal assessment within the state of Texas. According to Texas Education Code (TEC) 21.054, all principals must complete an assessment in order to maintain certification. The overarching goals of PASS include: 

1. To determine the level of knowledge and skills for the principalship that each principal assessed demonstrates.  
2. To provide quality assessment activities relevant to the role of the principalship.  
3. To provide purposeful and constructive feedback related to each principal’s demonstration of knowledge and skills.  
4. To provide opportunities for each principal assessed to be reflective about his/her level of knowledge and skills, as well as to his/her plan for professional growth.  

PASS is based on three sets of criteria: skills, standards, and knowledge. The skills included in the assessment comprise 18 of the 21 skills identified for the principalship by the National Board of Policy Educational Administration (see Appendix B). The standards are the seven State Board of Educator Certification (SBEC) Standards which are required by the state to be included in the assessment. The knowledge is a compilation of the Ten Components of Effective Schools, the framework components of Instructional Leadership Development (ILD), and the instructional processes from the Student Success Initiative (SSI).  

Each criterion is measured multiple times in PASS through a variety of authentic activities within the assessment. PASS contains a self-assessment process, a campus component, a teacher component, and a student component. All activities are based on authentic data provided by the principal being assessed and are directly connected to his/her campus.  

The assessment process occurs over a 30-day period. All online activities are completed within 16 days and are then submitted for assessor review. The assessors are given 11 days to review the online responses and conduct a phone interview with the principal. Each principal’s data and entry is reviewed by two assessors. One assessor is considered the primary assessor and, in addition to scoring the rubrics for each activity, provides written feedback on each activity. The assessment also includes one, face-to-face feedback day in which principals expand on their previous responses with a state-of-the-campus report and a plan of action for a teacher in need of assistance. Each primary assessor provides up to one hour of verbal feedback to each principal being assessed.
Appendix B

Functional Domain Skills comprise base-level management and organizational structure to supervise daily, routine campus business (e.g. to run the buses on time, schedule classes, or maintain order). Evidence of effectiveness is typically quantifiably measurable (e.g. attendance records, disciplinary referrals).

1. Leadership: Providing purpose and direction, formulating goals with staff and setting priorities based on community and district priorities and student and staff needs.

2. Information Collection: Classifying and organization information for use in decision making and mentoring.

3. Problem Analysis: Identifying problems, identifying possible causes, seeking additional needed information, framing possible solutions.

4. Judgment: Giving priority to significant issues then reaching logical conclusions and making quality decisions.

5. Organizational Oversight: Planning and scheduling own and other’s work so that resources are used appropriately and monitoring priorities so that goals and deadlines are met.

Programming Domain Skills provide systemic campus leadership requiring a holistic perspective that incorporates but surpass functional domain skills. More complex and difficult to quantify, these skills enable principals to develop frameworks, design anticipated outcomes, implement ongoing supervision, set goals, and draw inferences.

6. Instructional Management: Ensuring appropriate instructional methods are used to create positive learning experiences.

7. Curriculum Design: With staff, planning and implementing a framework for instruction and aligning curriculum with anticipated outcomes.

8. Student Guidance and Development: Enlisting the support and cooperation of diverse professionals, citizens, community agencies, parents and students to promote the growth and development of all students.

9. Staff Development: Supervising individuals and groups and providing feedback on performance and initiating self-development.

10. Measurement and Evaluation: Examining the extent to which outcomes meet or exceed previously defined goals, or priorities and drawing inferences for program revisions.

11. Resource Allocation: Allocating, monitoring and evaluating fiscal, human, material and time resources to reach campus goals and objectives.

Interpersonal Domain Skills employ functional and programming domain skills, but are subject to individual perception, making measurement more difficult. For example, principals may perceive themselves to be sensitive while faculty members disagree. Nevertheless, these skills improve effective implementation of both functional and programming skills.

12. Motivating Others: Creating conditions that promote the staff's desire to achieve campus goals and providing feedback, coaching and guidance to staff.

13. Sensitivity: Perceiving and responding to the needs and concerns of others.

14. Oral and Nonverbal Expression: Making oral presentations that are clear and easy to understand.

15. Written Expression: Expressing ideas and appropriately in writing for different audiences (Thomson, 1993).
# Appendix C

## Texas Education Agency: School Accountability Rating

<table>
<thead>
<tr>
<th>Base indicators</th>
<th>Academically Acceptable</th>
<th>Recognized</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAKS (2006-07) • All students</strong> and each student group meeting minimum size:</td>
<td>meets each standard: <strong>Reading/ELA</strong> ... 65% <strong>Writing</strong> .......... 65% <strong>Social Studies</strong> ... 65% <strong>Mathematics</strong> .... 45% <strong>Science</strong> .......... 40% OR meets required improvement</td>
<td>meets 75% standard for each subject OR meets 70% floor and meets required improvement</td>
<td>meets 90% standard for each subject</td>
</tr>
</tbody>
</table>

| SDAA II (2007) • All students (if meets minimum size criteria) | meets 50% standard (Met ARD Expectations) OR meets required improvement | meets 70% standard (Met ARD Expectations) OR meets 65% floor and meets required improvement | meets 90% standard (Met ARD Expectations) |

## Additional Provisions

- **Exceptions**
  - Applied if district/campus would be Academically Acceptable but fails to meet Academically Acceptable criteria.
  - Unacceptable due to not meeting Academically Acceptable criteria.
  - Exceptions cannot be used to move to a rating of Recognized.
  - Exceptions cannot be used to move to a rating of Exemplary.

## School Leaver Provision for 2007

- A campus or district annual dropout rate, completion rate and/or underreported student measures cannot be the cause of lowered rating.

(Texas Education Agency, 2007, p. 42.)
### Appendix D

Composition of Study Sample

Frequency Counts and Percentages of Principals Sampled by Texas Accountability Ratings and by Rural School Type (N=259)

<table>
<thead>
<tr>
<th></th>
<th>Academically Acceptable (AA)</th>
<th>Recognized (R)</th>
<th>Exemplary (E)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Of Total %</td>
<td>Count</td>
<td>Of Total %</td>
</tr>
<tr>
<td>Rural Elementary Campuses</td>
<td>27</td>
<td>(18.9%)</td>
<td>62</td>
<td>(44.6%)</td>
</tr>
<tr>
<td>Rural Middle School Campuses</td>
<td>40</td>
<td>(28.0%)</td>
<td>23</td>
<td>(24.0%)</td>
</tr>
<tr>
<td>Rural High School Campuses</td>
<td>76</td>
<td>(53.1%)</td>
<td>11</td>
<td>(11.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>143</td>
<td>(100%)</td>
<td>96</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

### Appendix E

Frequency Counts and Percentages: Texas Accountability Ratings by Principal Ranked NBPEA

Functional Domain Skills (N=259)

<table>
<thead>
<tr>
<th>NBPEA Functional Domain Skills</th>
<th>Academically Acceptable (AA)</th>
<th>Recognized (R)</th>
<th>Exemplary (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leas Enterprise</td>
<td>23 (17.3%)</td>
<td>9 (6.3%)</td>
<td>108 (76.2%)</td>
</tr>
<tr>
<td>Leadership</td>
<td>143 (55.2%)</td>
<td>12 (6.2%)</td>
<td>78 (81.2%)</td>
</tr>
<tr>
<td>Information Control</td>
<td>56 (39.3%)</td>
<td>46 (34.9%)</td>
<td>35 (36.2%)</td>
</tr>
<tr>
<td>Problem Analysis</td>
<td>31 (31.3%)</td>
<td>19 (19.8%)</td>
<td>45 (45.9%)</td>
</tr>
<tr>
<td>Judgment</td>
<td>23 (16.1%)</td>
<td>17 (11.7%)</td>
<td>68 (70.8%)</td>
</tr>
<tr>
<td>Organization Overview</td>
<td>72 (50%)</td>
<td>35 (26.3%)</td>
<td>96 (69.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>43.8</td>
<td>30</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Note. Less Confident = (ranks 5-7), Confident = (rank 4), Most Confident = (ranks 1-3), \( \times \) divided by.
### Frequency Counts and Percentages: Texas Accountability Ratings by Principal Ranked NBPEA

**Programming Domain Skills (N=259; n=254)**

<table>
<thead>
<tr>
<th>NPBEA Programming Domain Skills</th>
<th>Academically Acceptable (AA)</th>
<th>Recognized (R)</th>
<th>Exemplary (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Confident (n=254)</td>
<td>24 (16.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident (n=10)</td>
<td>24 (23%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=39)</td>
<td>39 (61.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>87 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curriculum Design</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Confident (n=243)</td>
<td>60 (42.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident (n=46)</td>
<td>46 (60.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=63)</td>
<td>56 (85.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>162/254 (64%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Guidance Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Confident (n=243)</td>
<td>43 (10.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident (n=49)</td>
<td>49 (12.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=50)</td>
<td>50 (31.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>142/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Confident (n=243)</td>
<td>38 (26.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident (n=53)</td>
<td>53 (35.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=31)</td>
<td>31 (21.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>142/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Human &amp; Institutional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Confident (n=243)</td>
<td>48 (22.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident (n=63)</td>
<td>63 (35.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=31)</td>
<td>31 (21.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>142/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Averages**

- Academically Acceptable (AA): 47 (56.2%)
- Recognized (R): 47 (56.2%)
- Exemplary (E): 5 (56.2%)

**Note.** Less Confident = (ranks 3-4), Confident = (ranks 3-4), Most Confident = (ranks 1-2); divided by.

---

### Frequency Counts and Percentages: Texas Accountability Ratings by Principal Ranked NBPEA

**Interpersonal Domain Skills (N=259; n=254)**

<table>
<thead>
<tr>
<th>NPBEA Interpersonal Domain Skills</th>
<th>Academically Acceptable (AA)</th>
<th>Recognized (R)</th>
<th>Exemplary (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Least Confident</strong></td>
<td>77 (53.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Most Confident</strong></td>
<td>66 (62.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>143/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motivation &amp; Others</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Confident (n=254)</td>
<td>56 (39.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=87)</td>
<td>87 (60.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>143/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Confident (n=254)</td>
<td>62 (43.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=81)</td>
<td>81 (56.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>143/254 (56.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oral &amp; Nonverbal Expression</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Confident (n=254)</td>
<td>77 (55.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=66)</td>
<td>66 (62.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>143/254 (55.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Written Expression</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Confident (n=254)</td>
<td>89 (55.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Confident (n=54)</td>
<td>54 (55.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>143/254 (55.3%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Count Averages**

- Academically Acceptable (AA): 71
- Recognized (R): 72
- Exemplary (E): 48

**Note.** Least Confident = (ranks 3-4), Most Confident = (ranks 1-2); divided by.
### Frequency Counts: Texas Accountability Ratings (AA, R, E) by Assessor Ratings of Principal NPBEA Skills (N = 259 assessor teams)

<table>
<thead>
<tr>
<th>NBPEA Domains</th>
<th>Skills</th>
<th>(AA)</th>
<th>(R)</th>
<th>(E)</th>
<th>TOTAL RATINGS</th>
<th>Total By Domain</th>
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<tbody>
<tr>
<td><strong>Functional Domain Skills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>365/714 (51%)</td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td>71</td>
<td>59</td>
<td>7</td>
<td>137</td>
<td></td>
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<tr>
<td>Information Collection</td>
<td></td>
<td>45</td>
<td>39</td>
<td>7</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Problem Analysis</td>
<td></td>
<td>16</td>
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<td>5</td>
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<tr>
<td>Judgment</td>
<td></td>
<td>26</td>
<td>28</td>
<td>8</td>
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<td>Organizational Oversight</td>
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<td>37</td>
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<tr>
<td><strong>Programming Domain Skills</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>204/714 (28.5%)</td>
</tr>
<tr>
<td>Instruction Management</td>
<td></td>
<td>34</td>
<td>20</td>
<td>3</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Curriculum Design</td>
<td></td>
<td>27</td>
<td>2</td>
<td>0</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Student Guidance &amp; Development</td>
<td></td>
<td>27</td>
<td>14</td>
<td>15</td>
<td>56</td>
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<td>Staff Development</td>
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<td><strong>Interpersonal Domain Skills</strong></td>
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<td></td>
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<td>145/714 (20.3%)</td>
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<td>Sensitivity</td>
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<td>36</td>
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</tr>
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<td>Oral &amp; Non-verbal Expression</td>
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<td>2</td>
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<tr>
<td>Written Expression</td>
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<td>8</td>
<td>6</td>
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Preparation Aspiring Superintendents to Lead School Improvement: Perceptions of Graduates for Program Development

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Changes in the design and delivery of educational leadership preparation programs are advocated in order to meet the needs of leadership for 21st century schools (Byrd, 2001; Cox, 2002; McKerrow, 1998; Smylie & Bennett, 2005). The changing needs of the 21st century, coupled with accountability standards and more diverse populations of students within school districts, create challenges for leaders who are attempting to increase student achievement (Firestone & Shipps, 2005; Schlechty, 2008). Further, student performance demands have increased at the state and national level because of the No Child Left Behind Act (Wong & Nicotera, 2007). These standards have thus increased the emphasis of the administrator's responsibility to positively impact student achievement (Taylor, 2001). With the graying of the profession and the need for exemplary school superintendents, the preparation of school superintendents who can successfully lead school improvement is vitally important (Lashway, 2006). According to the National Council for the Accreditation of Teacher Education (NCATE, 2002), university preparation programs should seek current leaders' perspectives of critical content components and the processes to be used in the preparation of educational leaders who can lead school improvement practices and processes.

This qualitative multi-case study identified nine practicing superintendents through purposeful sampling in order to attain their perspectives of critical practices and processes of school improvement, recommendations for educational leadership preparation programs, and
strengths of one particular university’s program for the preparation of school superintendents. Interviews were conducted with the nine superintendents who met the criteria identified for the study. These criteria were school superintendents who had been recognized as successful leaders of school improvement designed to achieve increased learning for students, graduates of a specific university preparation program, and representative of diverse rural, urban, and suburban schools. In the process, seven elements were identified as critical practices and processes in achieving school improvement for increased student learning, and implications for superintendent preparation programs were explored.

Conceptual Framework

Calls for reform of educational leadership preparation programs have been advanced for over a decade (Murphy, 1992). The use of problem-based learning and real life experiences to teach content, as opposed to primarily lecture-based delivery of course content, have been recommended for educational leadership preparation programs (Kochan & Reed, 2005). Murphy (1992) argues that university educational leadership preparation programs have traditionally placed too much emphasis on theory, management issues, irrelevant content, and poor performance standards instead of focusing on school improvement. Rost (1991) further criticizes traditional leadership theories built around an industrial age model, such as, trait-factor theory and contingency theories that are often included in texts used in educational leadership preparation programs. Rost (1991) argues,

These summaries of leadership theory movements are ritualistically repeated by author after author, especially textbook writers. As with other things that are repeated over and over, people begin to accept them as facts. These movements are part of the folklore of leadership studies and, like other folktales and myths, they are believed because leadership high priests have told us they are true. (pp. 17-18)

Sergiovanni (1996) argues, in his book entitled, Leadership for the School-House, that the roles of educational leaders differ from the roles of business leaders. Crow and Grogan (2005) further suggest that our understanding of leadership needs to extend beyond the corporate world to a broader understanding of the complexity of school leadership. In providing a critique of the educational leadership thought of the 20th century, Crow and Grogan (2005) argue that many of the traditional educational leadership theories were influenced by industrial and management literature.

For educational leadership in the 21st century, Starratt (2005) reinforces the importance of genuineness or authenticity in successful educational leadership. Donaldson (2006) provides a three-pronged metaphor for educational leadership emphasizing the three streams of relational, purposive, and mobilizing to action dimensions. Donaldson (2006) defines leadership as “the mobilization of people to adapt a school’s practices and beliefs so that every child’s learning and growth is optimized” (p. 3). He further argues that leadership is “a relationship that mobilizes people to fulfill the purpose of education” (p. 47). For successful relationships, authenticity is a pivotal factor as well as trust (Sergiovanni, 2007).

The new essential skills for school leaders include leading consensus, developing an academic school culture, engaging all stakeholders, and data analysis (Bellamy G.T., Fulmer, C.L., Murphy, M.J., & Muth, R., 2007). The superintendent serves a primary role in building a culture of academic achievement within the district (Fullan, 2001, 2005; Hoyle et al., 2005).
Implications for Educational Leadership Preparation Programs

In preparing school leaders for the 21st century, Levine (2005) identified several important elements for program evaluation of administrative leadership preparation programs including continual assessment for improving each candidate's performance as a school leader. In the process of improving university preparation programs, advisory committees have also been advocated to ascertain practitioners' perspectives of needs in the preparation of school leaders. Educational leadership program professors are encouraged to listen to stakeholders to collaboratively design preparation programs that meet 21st century needs in order to contribute to preparation program improvement (NCATE 2002). Hoyle (2005) recommends several ways that leadership preparation programs could meet the needs of the profession and enhance the practices of school leaders. He supports involving practitioners in the preparation of future superintendents. Hoyle advocates partnerships between professors and practicing administrators as a means for strengthening preparation programs.

Methodology

The purpose of this qualitative study was to identify critical elements for achieving school improvement in academic performance from the perspective of school superintendents who had led successful academic school improvement processes in diverse settings in order to identify their recommendations for content delivery in a superintendent preparation program and to identify strengths of the current program. Specifically, the research questions were:

1. What are the critical elements for superintendents as leaders of school improvement in order to improve student learning?
2. What are implications for content delivery in a superintendent preparation program?
3. What are the key strengths of one particular university's superintendent preparation program?

This study was designed to listen to the voices of superintendents as part of a preparation program improvement process in order to strengthen the university superintendent preparation program. Qualitative research methodology was selected as appropriate because the researchers sought to identify participants' perceptions of preparation needed for their roles (Merriam, 2009). Merriam (2009) further elaborates that a reason to use qualitative research is to examine organizations from the perspective of people within the organization. Through a purposeful sampling process, nine school leaders who had graduated from one university's superintendent preparation program and were currently school superintendents who had led successful school improvement processes, had successfully influenced an increase in the academic performance of students, and represented urban, suburban, and rural school district were selected to share their perspectives relative to the research questions. Purposeful sampling was appropriate for this qualitative multi-case study since “the purpose of purposeful sampling is to select information-rich cases whose study will illuminate the questions under study” (Patton, 2002, p. 46). Thick-rich description attained from the interviews served to enhance understanding of the findings relative to each research question.

The researchers conducted semi-structured interviews, and the responses from the participants were recorded. The interviews were transcribed and analyzed through open and axial coding to discern emergent themes. Trustworthiness of the data was maintained by member checks and by keeping an audit trail of all transcriptions (Lincoln & Guba, 1985; Merriam, 2009). Member checks were attained during the interview process as the interviewers asked for further clarification when meanings were unclear. Establishing accuracy in description and
interpretation was a critical skill needed in data analysis, and a process of peer debriefing ensured the accuracy of identification of the themes. The study was emergent in that answers to questions led to new questions without following a rigid design (Marshall & Rossman, 1989).

The ultimate strengths of the qualitative study were its contributions to knowledge and usefulness. Marshall and Rossman (1989) state that a qualitative study is significant in three ways: (1) by contributing to knowledge, (2) by usefulness and meaning to relevant policy areas, and (3) by its usefulness to practitioners. The present study was designed to meet all three goals. Through analysis of the data sources and the identification of common themes, patterns were discerned and a clearer understanding of critical elements in preparing aspiring superintendents was attained. It was projected that these findings would be useful in furthering understanding of ways to better prepare future superintendents.

Findings

This section examines the findings from each of the three research questions. Critical elements in school leadership will be discussed followed by a discussion of recommendations for superintendent preparation programs. Strengths of one university's program will also be shared.

Critical Elements in School Leadership

Content analysis of the interviews conducted in this research yielded seven critical elements in school leadership for increased student learning. The elements were: 1) ethical leadership; 2) a focus on teaching and learning; 3) strong communication skills; 4) problem solving skills; 5) finance skills; 6) an understanding of change; and 7) human resource management. Each will be discussed as follows.

Ethical leadership. As one administrator shared, "Ethical leaders are needed who have a genuine love and concern for students." This genuine concern will serve as the driving force for a positive vision of school improvement. Authenticity is reflected when actions mirror words that are spoken. As another superintendent stressed, "The superintendent must have character and integrity." Another superintendent reinforced, "Everything is a function of leadership. If the superintendents say they will do something, they must do as they say." The authentic leader models integrity and commitment, advocates for students, and works to achieve both equity and excellence.

A focus on teaching and learning. All superintendent interviewees supported accountability systems and a leadership responsibility to provide equity and excellence for all students. However, they had differing views on instructional leadership. Three of them expressed that the teachers are the primary instructional leaders while the remainder supported a belief that the superintendent's role included directly promoting teaching and learning. As one superintendent noted, "Superintendents need to understand instruction and have direct involvement in instructional decisions."

Another superintendent emphasized, "Decisions must be data driven and student centered, based on what is best for students." The other three superintendents expressed that educational leaders should foster decentralized leadership where the experts in the field are viewed as the instructional specialists. All interviewees reinforced that superintendents must understand the accountability system and serve as leaders of equity and excellence for all students in order to maintain a clear focus on the improvement of teaching and learning.
Communication skills. Just as the superintendent has been described as the “lead learner”, he or she should be the primary communicator of an educational vision. As one superintendent stressed, “The superintendent must communicate the expectations and values.” As communicator, the interviewees emphasized that communication skills include the dissemination of information, yet communication is fostered by the ability to build strong relationships with all stakeholders including the community members, teachers, administrators, business leaders, board members, and students. Communication skills include an ability to facilitate meetings with collaborative groups. The skills are also vital in facilitating productive school board member relationships. Board meetings, parent and community meetings, district site-based planning meetings, and district newsletters are examples of the many avenues open to the superintendent for communication of the school’s mission and goals (Duffy, 2004). One of the superintendents commented, “The greatest finesse a superintendent can have is the ability to bond people together with his/her philosophy and lead them. They can de-escalate situations so they don’t become public with a level of implementation where everybody wins.”

Inherent in communication skills is the ability to relate the district’s vision and mission as well as sharing the district’s message of academic achievement (Schourich & Skrla, 2003). Communication skills include the dissemination of information, building shared relationships with a variety of stakeholders, facilitating meetings, and presenting information through a variety of venues, such as, radio and newsletters (Duffy, 2004). One superintendent commented, “What and how I communicate is different dependent on the size of the district.” Yet, all superintendents in this study agreed that visibility was important. One superintendent commented,

Even in large districts, the staff wants to see you. I have 28 schools, and they want to see me. I have learned that it is when you see them that is most critical. They will all see you if you drop in during conference week. You need to be in the spot where they can see you.

One superintendent stated, “The superintendent must communicate the expectations and values.” Another superintendent stressed the usefulness of writing skills gained in the preparation program to foster growth in their staff and to develop action plans with their administrators and school boards. One superintendent commented, “The superintendent’s job requires common sense and the ability to deal with people from all walks of life and to speak to them on their level.” Further, all participants in this study emphasized the need to understand the legal framework of school district issues and the continued advocacy for what is best for all students.

Problem-solving skills. Problem-solving involves collaboration and knowledge of best practices. Deal and Peterson (1999) refer to the paradox of leadership and the artistry of it, suggesting that problems do not have easy answers. The nine participants reinforced that the superintendent must be willing “to make the hard decisions.” They emphasized the role of superintendents as problem solvers and stressed that the superintendent must understand both finance and the change process.

They noted that leaders need to analyze problems from multiple perspectives. One superintendent explained that he employed analytical skills in taking information and looking at it in relation to experiences or different research studies. The participants noted that finding critical questions and issues were part of their roles as superintendents. Another superintendent commented,
Superintendents need to have command of all components of the job, not just certain pieces. In a world in which our rules are changing on a daily basis, it is the ability to problem solve and project what you are going to do in two years when you don’t know the rules.

Finance. As problem-solvers, the superintendents recognized that sound financial management of a school includes leveraging resources in addition to seeking funds, budgeting and utilizing funds wisely. Throughout the interviews of these practicing superintendents, it was apparent that their recommendations for school financial management includes leveraging resources to meet needs in addition to seeking new sources of revenue. Understanding the budgeting process and using resources both efficiently and effectively were emphasized. One superintendent stated, “You never hear of superintendents being fired for any other reason than they lost so much money. The crucial key is managing money and making sure the district has the revenue to run the school.”

Change process. As superintendents seek to meet the challenges of equity and excellence for all students along with the elimination of achievement gaps among different socioeconomic groups of students, superintendents look for areas where policies, practices, and processes serve as inhibitors or barriers to achieving the school’s vision (Duffy 2004). One participant in this study stated, “We have been taught to be change leaders in the right way, and I am thankful for that.” Throughout this study, superintendents emphasized the importance and significance of leading change processes within their districts. One superintendent stated, “All decisions need to be based on what is best for students. If you can keep that in mind, you will make the right decisions.” Another superintendent emphasized, “You won’t get meaningful change unless you ground your decisions on research.” One superintendent stated, “We are now in a risk environment. You have to take the risks to survive.” This reality was supported by an expressed need for providing support to the administrative team. A superintendent commented, “The superintendent needs to understand how to lead an administrative team. The superintendent’s job is to be the instructional leader for the principals.”

Human resource management. Another key element that was identified by superintendents was that of human resource management. Using the metaphor provided by Collins (2001) in the book, Good to Great, the nine interviewees emphasized that great leaders have the right people in the right places to achieve school improvement in academic performance. All nine superintendents emphasized that great leaders choose the right people and place them in positions to lead efforts to achieve school improvement in academic performance. As one superintendent stated, “The superintendent must hire great leaders.” The successful school superintendent assists all faculty members in the district to ensure that professional development is provided. He or she is responsible for developing “organizational learning”, added another superintendent. Another superintendent stated, “Superintendents need people skills and recognize the right people to do the job. They need the courage to hire the right person.” A successful superintendent leads the school in formulating a shared vision that is centered on the improvement of learning for a culture of academic achievement (Fullan, 2001). He or she provides resources for district and campus initiatives for professional development to promote attainment of the school’s vision. Further, one superintendent stated, “A superintendent needs the ability to identify another person’s strengths and to design the responsibilities around those strengths. The emphasis needs to be on picking the right people and then analyzing their strengths.” Another superintendent emphasized,
When you become the superintendent, you are the coach. Everybody is a team player. The janitorial staff has the building clean so it looks good. The bus drivers say good morning to the students every time they get on the bus with a smile. You have to orchestrate all these actions.

**Recommendations for Content Delivery in a Superintendent Preparation Program**

In providing recommendations for superintendent preparation programs, increased internships and simulation experiences with an emphasis on developing reflective practitioners were emergent themes found in the data. All participants recommended that superintendent candidates engage in “real world” experiences as part of their preparation program. As one superintendent expressed, “As much time in real life situations as possible is needed.” He further explained that this could include attending school board meetings, administrative team meetings and conducting action research projects within their school districts. These real world experiences could also be gained through quality internship experiences and realistic case studies within classroom experiences. The participants also encouraged the use of practitioners as speakers within the preparation classes.

The participants stressed the importance of the internship in preparing school leaders. Consistent with NCATE recommendations for a full semester internship in addition to field experiences within courses, superintendents stressed that projects, such as budget preparation, are needed instead of internships consisting of job shadowing. As one interviewee stated, “Expect active participation and high quality work from candidates.” The research participants also emphasized the importance of providing experiences wherein the aspiring superintendent could practice group facilitation skills and teamwork. To establish “buy-in” to school improvement, stakeholders must have a role in planning the initiatives. The superintendents encouraged preparation program faculty to assist aspiring superintendents in the use of tools for group processes, such as, nominal group techniques and force field analysis as decision making tools for reaching consensus. Scenario-based instruction using hypothetical situations that superintendents face was listed, such as: working with angry and difficult constituents, conducting a public hearing on the Academic Excellence Indicator System (AEIS) and school report cards, preparing board packets for a board meeting, preparing financial statement for the board, analyzing the conditions of facilities, dealing with the media in crises situations, and evaluating the educational needs of the district. One superintendent stated, “The university professors need to instill in all their students that a superintendent is a support person in a district, so they will understand that the superintendents help people do a better job while being the spokesperson and public relations person for the district.”

**Key Strengths of One Superintendent Preparation Program**

The need for leaders of urban schools who possess unique knowledge and skills compared to their suburban or rural school counterparts has surfaced. Texas, for example, has over 1,036 separate individual districts. Houston, Dallas, San Antonio, Fort Worth, Corpus Christi, and Austin are major cities reflective of needs found in urban schools throughout the nation, such as, high drop-out rates and schools with less than satisfactory performance ratings. Changing demographics bring additional challenges to schools of all sizes as educators design programs to meet the needs of English language learners. The preparation of educational leaders who can successfully respond to these multiple needs is of utmost importance (Reyes & Wagstaff 2005).
While criticisms of educational leadership programs, such as Levine’s (2005) study have been widely publicized, the merits of programs have not been largely discerned. The interviewees stressed that the primary strength of the current program at this regional university was that experienced professors with practitioner experience merged theory and practice to develop scholar-practitioners who would be successful in urban, rural, or suburban settings. Structural features that also strengthened the program included the cohort structure wherein a network of support is established. Students proceed through the program as a cohort of no more than fifteen individuals, while establishing close relationships with site mentors through faculty visits to internship sites.

Discussion

Increasingly, calls for changes in educational leadership preparation programs include the recommendation of a focus on improving teaching and learning (Prestine & Nelson, 2005). Leaders for school improvement need preparation in leadership and management to strengthen the attainment of teaching and learning goals including an ability to look at needs from many perspectives (Bellamy, et al., 2007).

Colleges of education have a moral responsibility to candidates, schools, and communities to prepare leaders who are equipped with the knowledge and skills to lead schools in the improvement of teaching and learning (Sergiovanni, 2007). In this global economy, 90% of the fastest growing jobs will require postsecondary education, and students must be prepared in order to enter the workforce in higher skilled jobs (Spelling, 2007). Ultimately, rather than just preparing students to enter the workforce, schools must also consider that a fundamental purpose of schools is to prepare an educated citizenry for the preservation of democracy (Kochan & Reed, 2005). Superintendents must be prepared to meet all of these diverse needs.

In the 1970’s, the leaders of schools were charged to serve as instructional leaders. This concept received strong criticism in the 1990’s as the term was criticized as indicative of an all-knowing leader who would mandate instructional processes and serve as the authority on knowledge. Instead, educational leaders should foster distributed leadership whereby the experts in the field are viewed as content specialists (Elmore, 2005).

Successful school superintendents serve as the primary communicators of the mission and vision of the district and use their platform as school leaders as opportunities to share the district’s message of equity and excellence in academic achievement (Scheurich & Skrka, 2003). AASA (2008) challenges superintendents to serve as champions for the cause of quality education available to all children.

As part of problem solving, the superintendents emphasized that they must understand the change process. As they seek to meet the challenges of equity and excellence for all students and the elimination of the achievement gap, successful superintendents look for areas wherein the policies, practices, and processes serve as inhibitors or barriers to achieving the school’s vision (Duffy, 2004). Successful school superintendents recognize the importance of analyzing an improvement effort holistically to determine systemic issues that may serve to strengthen or inhibit the attainment of the goals (Pelavin & Kane, 1990). Interviewees stressed the importance of data analysis in problem solving to strengthen school improvement in academic performance.

Smylie and Bennett (2005) argue, “School leader development is getting a lot of attention these days. . . . First, it has become increasingly clear how important leadership is to school improvement and effectiveness” (p. 138). Traditional superintendent preparation programs have been criticized for emphasizing theory rather than field-based, relevant practical issues related to the improvement of student achievement (Wallace Foundation, 2006). Recommendations for re-
designed programs stress the importance of extensive internship experiences with assigned mentors to guide novice superintendents in learning the knowledge and skills that are required for school improvement to promote increased academic achievement (NCATE 2002).

To develop superintendents who will serve as advocates for student learning, professors in this redesigned superintendent preparation program have emphasized new role conceptions for superintendents based on practices and processes illustrated by school superintendents who have been effective in promoting teaching and learning initiatives to enhance academic achievement. Professors of educational leadership programs can contribute to evaluation efforts of preparation programs by participating in a dialogue about the meaning of leadership and critically examining content and delivery systems of leadership courses. Our analysis of superintendents’ perspectives of this leadership preparation program offers an example of ways to include current practicing superintendents’ recommendations as part of the process of defining leadership and the delivery of content in other universities’ superintendent preparation programs.

Program Evaluation

For university faculty to determine needed changes, a concurrent evaluation process was important in understanding the needs for this unique preparation program. The program did not stop while faculty members made determinations of necessary changes for candidates in the program. This assessment was a continual and cyclical process for professors and program designers in order to be in constant evaluation for improvement. There were many standards to weave together in order to make sure that the courses matched the recommendations of different professional organizations. For example, this superintendent program wove together standards from the state of Texas for superintendent certification, the ELCC standards, the College of Education’s core values and standards, and the ISLLC standards. While many of these standards overlapped, analyzing each of the standards enabled a view of what was lacking in the current program. A re-alignment of coursework goals was determined with problem-based assignments that were both reflective of the standards and required reflective thought on the part of candidates in real-life experiences for superintendents. The goal was to blend theory with practice.

The scholar-practitioner model of this university’s superintendent preparation program applied theory to practice by including the incorporation of the college’s core values of openness, integrity, lifelong learning, collaboration, service, and academic excellence. The model promoted candidates’ reflections on their practices by examining the practices against concepts of democracy, caring, and equity in order to provide the necessary leadership to guarantee that all students receive the education they so desperately need.

How do university preparation programs ensure that future superintendents are equipped with the skills to serve as the instructional leaders for a district? They must help guide leaders in the critically reflective practice of understanding pertinent theories and blending them into actual practice. This reflective practice can serve as a critical part of problem-based learning.

How do university professors and program designers prioritize problem-based learning for candidates preparing to be superintendents? Data driven decision making served as an avenue for addressing this question. For example, first, faculty members conducted an analysis of the standards to determine the standards endorsed by professional organizations and accreditation agencies. Then, the faculty members analyzed local data including the values and beliefs of the college and department. Graduates were interviewed to gain input from the stakeholders who had completed the program and found success as school superintendents. After
analyzing the data, faculty addressed the alignment of courses, assignments, and assessments to determine how well they matched the standards, values, and input from the stakeholders.

This continual improvement process was strengthened through the lens of critical reflection of the practices. The analysis reported in this paper serves as an example of data driven analysis for evaluating a preparation program. The nine superintendent/interviewees provided recommendations for follow-up to make sure that the superintendent program continues to be updated to reflect best practices. They shared valuable insights of the program needs, and their knowledge base gave relevancy to the program’s evaluation.

Conclusion

The superintendents in this study identified ethical leadership, a focus on teaching and learning, communication skills, problem solving skills, finance, change process, and human resource management as critical elements in the school improvement process for enhanced student learning. They recommended that each of these elements be included in superintendent preparation programs.

They also recommended emphasizing real world experiences, such as, conducting action research projects in their school districts and the use of case study problem solving simulations which would help the future superintendents learn important skills which would assist them in successfully meeting the challenges within the position. They stressed that internship experiences combine theory and practice into high quality, real life experiences and that maintaining a regular practice of reflective journal writing about their day to day experiences would be beneficial to both practicing and future superintendents.

With the aging of many current superintendents, the preparation of aspiring leaders becomes vital (Lashway, 2006). The current stress of this position with its multiple responsibilities requires that leaders are prepared to meet the multiple challenges (Bellamy et al., 2007; Smith & Piele, 2006). Schlechty (2001) emphasizes, “The world of the year 2000 is less like the world of 1950 than the world of 1950 was like the world of 1850” (p. 36). Schlechty (2001) further argues that schools must produce different results than previously expected. It is vital that superintendent preparation programs develop candidates’ knowledge, dispositions, and skills in such a way that they will be successful as school superintendents.

Traditional superintendent preparation programs have been criticized for emphasizing industrial and management concepts rather than field-based, relevant practical issues related to the improvement of student achievement (Wallace Foundation, 2006). Recommendations for redesigned programs stress the importance of extensive internship experiences, with assigned mentors, to guide novice superintendents in learning the knowledge and skills that are required for school improvement to promote increased academic achievement (NCATE, 2002).

With the current accountability system in many districts, if the superintendents are not effective in improving student achievement, they will be removed as district leaders (Firestone & Shipp, 2005; Wong & Nicotera, 2007). Candidates’ future job security rests in large part on their ability to serve as effective school leaders for school improvement. The challenges of school leadership are many. Aspiring superintendents in university preparation programs must be prepared to serve as transformative, multi-faceted leaders in school districts. To achieve this goal, assessment for ongoing improvement of preparation programs is vital. This study illuminated the voices of nine successful school superintendents who identified critical elements in leadership of school improvement for academic success, key recommendations for preparation
program delivery, and current strengths of one superintendent preparation program. Their voices contributed to a collective understanding of ways to strengthen superintendent preparation programs to meet the needs of 21st century schools.

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An Investigation of Principals' Use of Data in Data-Driven Decision-Making
and the Impact on Student Achievement

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The passage and implementation of the No Child Left Behind Act (NCLB, 2001) ushered
in a new era of educational accountability and school improvement. Schools are held accountable
to meet adequate yearly progress that requires educators to closely monitor student performance
on high-stake assessments. Further, NCLB significantly increases the pressure on states, districts
and schools to collect, analyze and report data. Accountability demands are increasingly forcing
school leaders to explore student-level data and to complete more sophisticated analyses. Data-
driven decision-making (DDDM) has become an emerging field of practice for school leadership
(Sreifer, 2002) and a central focus of education policy and practice (Mandinach, Honey, &
Light, 2006). Nationwide standards-based control and outcome-based funding have brought
DDDM to the top of every principal’s agenda (Leithwood, Aitken, & Jantzi, 2001).

The extensive use of DDDM in policy and practice at schools reveals a strong need for
research on the current realities of DDDM practices and how those practices impact student
achievement. DDDM is a critical issue in both practice and research, yet surprisingly little
empirical research has actually been conducted on these issues, especially from the principal’s
perspective (Luo, 2008). In addition, university preparation programs are facing increased
scrutiny as principals are facing new roles and heightened expectations, requiring new forms of
training. In particular, the demand that principals have a positive impact on student achievement
challenges traditional assumptions, practices, and structures in leadership preparation programs
(Lashway, 2003). In fact, there is little evidence that current coursework in traditional
preparation programs directly connects practices to principals’ on-the-job performance or to
student achievement (Browne-Ferrigno & Muth, 2004). A recent survey of principals supports this notion. Butler (2008) found that two-thirds of 500 principals surveyed believed that typical graduate leadership programs “are out of touch” with today’s realities. Butler’s finding is alarming as we are in an era of high-stakes exam where principals are required to use data analysis in DDDM, yet many have to learn these skills on the job. To exacerbate the dilemma, data analysis skills are not taught to future principals in many pre-service preparation programs even at this late date.

Theoretical Framework

Dervin’s (1983; 1992) Sense-Making Theory provides a useful theoretical framework for this study. Dervin’s model views information behavior in terms of a situation, a gap and an outcome, with information being used to bridge the gap and achieve the outcome. This framework, with its recognition of the importance of understanding how the information helps the user “make sense” of a situation, highlights the role of information use.

However, in subsequent discussions of Dervin’s work (e.g., Choo 1993; Wilson 1999), it is often the classification and articulation of information needs (i.e., the nature of the gap) that is emphasized. While need and use are clearly linked since information is needed to fulfill a use, there is a shift in perspective and emphasis depending on whether the focus is on needs or uses. Discussion of need tends to highlight the purpose for which the information is sought – the goal or objective – but does not usually extend to including exactly how the information is applied to achieving the goal. Shifting the focus to use can highlight the latter.

Sense-making theorists argue that the meaning of information is not self-evident; rather, individuals need to construct their understanding of the meaning and implications of the evidence at hand. Theorists do this by fitting new information into their pre-existing understandings or cognitive frameworks (Porac, Thomas, & Baden-Fuller, 1989; Weick, 1995). Kennedy (1982) calls these frameworks working knowledge, or, “the organized body of knowledge that [school] administrators and policymakers use spontaneously and routinely in the context of their work. It includes the entire array of beliefs, assumptions, interests, and experiences that influence the behavior of individuals at work” (p. 1-2). Thus, interpretation of evidence is mediated by an individual’s beliefs and experiences.

In addressing the areas of principals’ DDDM practice, the Educational Leadership Constituent Council (ELCC, 2002) standards were used as the framework for this study, through which high school principals’ DDDM was examined in the context of improving student achievement. The National Policy Board for Educational Administration published the revised Standards for Advanced Programs in Educational Leadership in 2002, which were developed and revised by the ELCC (2002) and adopted by the National Council for the Accreditation of Teacher Education (NCATE, 2002). The ELCC standards serve as school leadership preparation program standards and can be used as a cornerstone for the professional development of existing school administrators (Murphy & Shipman, 1998; Murphy, Yff, & Shipman, 2000). Compared to the old standards, the revised standards have more emphasis placed on school administrators’ ability and knowledge in using data where DDDM is integral to school administrators’ skills in all the area standards (Lou, 2008). While state and national standards recommend principals practice DDDM, it is not clear how principals use data to improve student achievement. Therefore, the purpose of this study was to determine how principals’ use of data in the DDDM process affects student achievement.
Review of Literature

In an effort to address the needs of an ever increasing diverse student population, school leaders are compelled "to have enough information at hand to know where problems exist and how to best solve them" (E-lead, 2009, p. 4). DDDM in the context of schools involves a process of collecting, disaggregating and analyzing student data. This collection of student data, according to Cradler (2009), serves "to inform decisions related to planning and implementing instructional strategies at the district, school, classroom, and individual student levels" (p. 1). This process is "more than an accountability tool; it is a diagnostic tool (Doyle, 2003, p. 1) that requires school leaders to be data and data analysis literate.

Processing of information is a vital aspect of human behavior and is a critical input to the decision process (Taylor, 1986). Dervin (1992) posited that making sense of the data (sense-making) is an active two-way process of fitting data into a frame (mental model) and fitting a frame around the data. Neither data nor frame comes first; data evoke frames and frames select and connect data.

Data analysis skills related to principals' education background and training experience seem to be a critical element influencing principals' information behaviors of DDDM (Choppin, 2002; Mason, 2002). If principals are to "incorporate the information into their cognitive maps or repertoire of strategies, they must attend to it and have sufficient knowledge and ability to interpret it" (O'Day, 2002, p. 299). While school leaders may fear or even loathe quantitative or qualitative analysis, DDDM based on rigorous statistical measures requires an understanding of the statistical principles that underlie the decisions being made (Earl & Katz, 2006). Thus, it is the priority of DDDM for principals to have a basic understanding of applied statistics, data analysis skills, and other necessary computer skills (Thornton & Perreault, 2002). The importance of principals' having these skills is further underscored by Hoyle, English, and Steffy (1994) who submitted that successful school leaders are skillful at interpreting and conducting research, evaluating programs, and planning for the future.

DDDM is an interactive, multifaceted, and contextual practice within the school organization. Decision makers, the uses of data, and the context within which decision makers make choices are interrelated. The situational context of information acquisition and use through which decisions are made are critical in understanding organizational decision making (Dervin, 1992).

To develop schools organizationally, effective leadership requires local educators to use data effectively to influence decisions based on particular sets of needs and circumstances (Leithwood, Begley, & Cousins, 1994). Without such local discretion, school improvement would probably be frustrated, and school performance would suffer (Hallinger & Heck, 1998; Leithwood, 1994; Marks & Prinzy, 2003; Mohrman, Wohlstetter, & Associates, 1994). Because data abound, principals must become data savvy in using student-level data in making informed decisions. Maxwell (2004) submits that collecting data and analyzing the data is the linchpin of both district and campus improvement initiatives, and part of the reason that exemplars of "best practices" are using data to manage a wide range of school functions, especially those directly related to student achievement.

The quest for quality education during the past five years has resulted in a number of initiatives, which have made significant demands on principals in public sector schools, amongst which is the practice of accountability. Hence, school leadership in the context of accountability requires a paradigm shift, moving from the traditional concentration on maintenance and hierarchy, to change, collegiality, teamwork, and instructional improvement at the classroom
level. More succinctly, principals must understand how to establish a shared vision and design professional development opportunities that involves everyone to ensure that decisions are aligned with the shared vision and all decisions are indeed data-driven.

Shared Vision

Across mainstream educational leadership literature, the term vision has had two primary definitions: (a) a leader’s image of the future and (b) change goals. Translating vision into practice has become increasingly difficult (Yilmaki, 2006). An important aspect of vision is the notion of "shared vision." Studies have shown that it is the presence of personal vision on the part of a leader, shared with members of the organization that may differentiate true leaders from mere managers (Manasse, 1986). Therefore, a leader’s vision needs to be shared by those who will be involved in the realization of the vision.

Regarding teachers’ use of data for instructional planning and feedback, Young (2006) found that school leadership interacts with the normative work arrangements within teachers’ grade-level teams. Young demonstrated how shared leadership focused on data use affected teachers’ motivation for using data and “correspondingly loosens or tightens the connections between data-driven rhetoric and teachers’ data practices” (p. 332). Young defined leadership as agenda setting, a term she chooses to mean articulating general reasons for using data and specific expectations for particular data, modeling data use, scaffolding teachers’ learning about data use, and structuring collaborative time for data use. Young also suggested that both depth of activity and breadth of collaboration are important developmental considerations that school leaders can influence. Particularly in the important early stages of any new implementation, leaders of schools can “structure team interactions with instructionally relevant activities” (Young, 2006, p. 543) so that teachers practice new strategies even as they forge new collaborative norms to attain the shared vision.

Professional Development

Student achievement data point out professional development needs for individual schools and teachers. However, if data are to provide meaningful guidance in the process of continuous improvement, teachers and administrators require professional development regarding data analysis, designing assessment instruments, implementing various forms of assessment, and understanding which assessment to use to provide the desired information. It takes time for teachers and principals to learn new skills and behaviors. One-shot workshops will not accomplish the goal, no matter how good the workshops are. People need to focus their efforts over time until new behaviors become internalized. Individual teacher growth can improve student learning, but whole school professional development holds promise for raising the achievement levels of all students (Walker, 2007). Because the pre-service preparation of principals in assessment and data analysis has been weak or nonexistent, educators must have generous opportunities to acquire knowledge and skills related to formative classroom assessment, data collection, data analysis, and data-driven planning and evaluation (NSDC, 2009). According to Dervin’s Sense-Making Theory, DDDM requires information and the proper interpretation of the results to bridge the gap and achieve the intended outcome. While on-the-job internships offer pre-service administrators a glimpse of the requirements for the position, they do not offer ample time to learn everything about the job prior to practicing, including how to use data to design professional development opportunities around the use of data (Peterson, 2002). In a comparison of three urban school systems, Firestone, Mangin, Martinez, and Polovsky (2005) suggested that district offices can influence teaching through...
professional development. District and campus leaders can structure their programs to provide coherent and content-focused professional development. However, given the many demands placed on the principal, it is not clear how principals use data to determine professional development opportunities for teachers to improve student achievement.

As states have grown more influential by developing standards for curriculum, student performance and assessment, school districts and schools have had to yield considerable autonomy, becoming accountable to the state for a range of student outcomes (Conley, 2003; Fuhrman & Elmore, 2004). Failure to meet state and national academic assessments can subject districts to takeover and schools to reconstitution. Intensifying the pressures of this high-stakes environment, local stakeholders, such as parents and businesses, have also demanded improved student performance. In response, community and school boards often establish their own sets of goals for schools (Firestone & Ships, 2003).

Principals Use of Data

Although NCLB requirements involve the use of data to make decisions to assist teachers to impact behavioral change to ensure students graduate college and workforce ready and reach intended goals, studies have shown that principals lack the knowledge to properly analyze data. Reeves and Burt (2006) found that principals were concerned about the use of data analysis due to lack of training among both principals and teachers. In addition to the frustrations of principals that are not sure exactly what data to use or how to use it, the frustrations of teachers’ abilities to use the data abound as well. Many principals that are inadequate at collecting, analyzing and using data themselves have even more difficulty in leading their teachers through the DDDM processes necessary to affect behavioral change in the schools (Reeves & Burt, 2006).

Data use essentially sets a course of action and keeps a staff on that course to school improvement and student success. Further, the wealth of data from assessments of student achievement, as well as information available from other evaluations of student and school performance, can create a divide or gap between what is currently being done and what needs to be practiced to improve student performance. While the elements of Dervin’s theory are common place in schools (a situation, a gap and an outcome, with information being used to bridge the gap and achieve the outcome), the interpretation and use of data among principals to improve student achievement is uncertain. This is further exacerbated by the fact that most university principal preparation programs do not place a strong emphasis on ensuring that principals have data analysis skills. The expanding nature of information accessibility requires school and district leaders and teachers to analyze and interpret multiple forms of data that theoretically result in substantive changes.

While there has been much rhetoric surrounding the quality of principal preparation programs (Brown-Ferrigno et al, 2002; Levine, 2005; Maxwell, 2008; Tirozzi, 2001), and given the increasing demands placed on school leaders by NCLB to improve student achievement, the question of how principals use data to improve student achievement once they are in the field has taken on heightened significance (Brown-Ferrigno & Muth, 2004; Butler, 2008). Therefore, the purpose of the current study was two-fold: 1) to determine how principals use data; and 2) to determine the impact of principals’ data use on student achievement.

Method

The participants in the current study included 375 principals from 8 large urban districts across the state of Texas with an average enrollment of 81,254 students. Among the 375 participants, 265 (70.7%) were female, while 110 (29.3%) were male. Regarding race, 37
(15.2%) were African-American, 135 (36.0%) Anglo, 141 (37.6%) Latino, 2 (.5%) Native American, while 40 participants (10.6%) were classified as other.

The majority of participants (n = 249, 66.4%) were employed in elementary campuses, while 56 (14.9%) were employed as principals in middle schools and 70 (18.7%) were principals in high schools. Average tenure among participants in the current position ranged from 3.43 years (SD = 3.23) among junior high principals to 4.32 years (SD = 4.66) among elementary principals. In addition, the average experience as a principal among the total participants was 8.39 (SD = 6.49), while average length of tenure at the current campus was 4.17 (SD = 4.37).

Table 1

<table>
<thead>
<tr>
<th>Campus Type</th>
<th>Tenure as Principal at Current Campus</th>
<th>Years as Certified Principal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean (Years)</td>
</tr>
<tr>
<td>Elementary School</td>
<td>249</td>
<td>4.22</td>
</tr>
<tr>
<td>Middle School</td>
<td>56</td>
<td>3.43</td>
</tr>
<tr>
<td>High School</td>
<td>70</td>
<td>4.20</td>
</tr>
<tr>
<td>Total</td>
<td>375</td>
<td>4.17</td>
</tr>
</tbody>
</table>

Regarding the highest degree obtained, 343 respondents (91.4%) held a Master’s degree while 32 (8.6%) held a doctorate degree. The majority of participants were trained in traditional university certification programs (n = 352, 93.8%) while the remaining 23 participants (6.2%) were trained through alternative certification programs. Note alternative certification programs included both private providers and regional educational service centers throughout Texas.

Data collection for this study included an online survey designed to determine how principals use data and student achievement data (campus-level), which was obtained from the Texas Education Agency. In addition, two focus group sessions were conducted in each of the eight districts with one focus group comprised of a random sample of 15 teachers and the other comprised of 15 principals that were representative of the campuses participating in the study.

Initially, permission to conduct the study was obtained by the superintendent of each participating district. Subsequently, a cover letter describing the project with the survey link embedded in the letter was sent to 500 principals seeking their participation in the study. After two weeks elapsed, 276 principals responded with a response rate of 55.2%. A follow-up letter with the survey link included in the letter was sent to participants that did not respond in the initial two-week period. The follow-up letter yielded an additional 125 respondents with only 99 complete and useable surveys. The final total included 375 participants with an overall response rate of 75%.

Instrumentation and Variables

The Principal Data Use instrument utilized in the current study was derived from a thorough review of the literature and the ELCC/NCATE (2002) leadership program standards. The instrument asked participants to rate their use of data in three key areas that included: (1) how they use data to improve student achievement, (2) how they use data to shape the vision, and (3) how they use data to design professional development for teachers. It was assumed that all participants defined data similarly in their responses. Participants rated the frequency of their use of data based on a corresponding 4 choice scale that included 1 = rarely or never, 2 = sometimes, 3 = often, and 4 = always.

Content Validity

Initially, the Principal Data Use instrument was comprised of 20 questions. A review panel consisting of 25 practicing principals, 3 university professors in educational leadership, and 2 professors in educational psychology reviewed the instrument. After a thorough review, two
questions were deemed inappropriate for the survey based on the questions' content, and three were determined to be redundant. After deleting the five questions that were concerns to the panel and tweaking the wording based on the panel's recommendation, the final Principal Data Use instrument included a total of 15 items.

**Construct Validity**

To determine the underlying structure of the instrument, principal component analysis was conducted utilizing a Varimax orthogonal rotation. Based on the principal component analysis and the results of the Parallel analysis (O'Connor, 2001), it was determined that the instrument was indeed measuring three underlying constructs. Construct 1 included four items measuring principals' use of data to improve student achievement (ELCC, 2002; Standard 2 and 4). Construct two included eight items measuring principals' use of data to shape vision (ELCC, 2002; Standard 1 and 6), and construct three included three items measuring principals' use of data to design teacher professional development (ELCC, 2002; Standard 2 and 3). Reliability for the total instrument (as measured by Cronbach's alpha) was .908. Regarding reliability of each construct, reliability for construct 1 = .78, construct 2 = .89, and construct 3 = .80.

**Outcome Variable**

In the current study, student achievement was measured by two indicators which included the percentage of students passing the Texas Assessment of Knowledge and Skills (TAKS) reading and mathematics assessments at the campus level. The TAKS is a comprehensive testing program for public school students in grades 3-11. The TAKS is designed to measure to what extent a student has learned, understood, and is able to apply the concepts and skills expected at each tested grade level. Each test is linked directly to the Texas Essential Knowledge and Skills (TEKS) curriculum. The TEKS is the state-mandated curriculum for Texas public school students (TEA, 2008).

**Procedures/Data Analysis**

Initially, descriptive analysis was conducted among the survey items. Subsequently, structural equation modeling (SEM) was conducted to determine how principals' use of data affects student achievement. AMOS (version 18) was used for all analysis.

SEM is primarily aimed at studying the relationships among sets of variables, which can be either observed or unobserved. Further, SEM is used as a confirmatory more than an exploratory modeling method, and thus allows researchers to test hypothesized models and modify them subsequently according to theory and sample-based evidence. As a confirmatory technique, SEM requires a substantive theory underlying the hypothesized model and a representative sample for data analysis. When the model fit is not satisfactory, theoretical justifications are needed to revise the model, in addition to the mere statistical modification indices (Hancock & Mueller, 2006).

**Results**

The descriptive statistics of overall mean scores and standard deviations for each of the three constructs of the Principal Data Use instrument are displayed in Table 2. In addition, reliability of each construct is provided in parentheses.

The overall mean scores indicated that principals frequently use data to improve student achievement, shape the vision, and design teacher professional development. The largest mean was associated with principals' use of data to design professional development for teachers (M = 3.29, SD = .592). In comparison, the lowest mean was associated with principals' use of data to improve student achievement (Mean = 3.20, SD = .79). While there were nominal
differences between subscale scores, the results of the Factorial Analysis of Variance (ANOVA) revealed no statistically significant differences in frequency of principals' use of data across campus levels (i.e., elementary, middle or high school).

Table 2

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Uses Data to Improve Student Achievement (α = .78)</td>
<td>2.00</td>
<td>.709</td>
</tr>
<tr>
<td>1. I involve school staff, students, and school community to determine how differing audiences interpret the data.</td>
<td>3.05</td>
<td>.634</td>
</tr>
<tr>
<td>2. I conduct focus groups to dig deeper into the data analysis results.</td>
<td>3.05</td>
<td>.733</td>
</tr>
<tr>
<td>3. Student-level data is analyzed in core subject areas regularly (1-3 times a year).</td>
<td>3.44</td>
<td>.712</td>
</tr>
<tr>
<td>4. Cohort-level data is analyzed in core subject areas regularly (1-3 times a year).</td>
<td>3.22</td>
<td>.727</td>
</tr>
</tbody>
</table>

Principal Uses Data to Shape Vision (α = .39) | 3.25 | .641 |

6. Principals and campus-level staff have developed campus-wide instructional assessments aligned to standards, administered at least 3 times per year in core subjects. | 3.18 | .604 |

7. I examine "leading indicators," such as results of annual TAKS, to study past instructional practices. | 3.26 | .720 |

8. I examine "lagging indicators," such as results of annual TAKS, to inform immediate instructional decisions. | 3.33 | .589 |

9. I gather data in the classroom and hold data-driven meetings to better understand students’ progress toward student achievement goals. | 3.32 | .637 |

10. I have communicated clear and defined student achievement goals for each subject area. | 3.21 | .672 |

11. I have communicated clear and defined student achievement goals for each subject area. | 3.33 | .648 |

12. I use data to shape the vision of my campus. | 3.01 | .616 |

Principal Uses Data to Design Teacher Professional Development (α = .80) | 3.19 | .592 |

13. I ensure that teachers have regular opportunities to access and use data individually and in teams to review and gauge student learning and alter their instruction accordingly. | 3.26 | .597 |

14. Data analysis has helped to identify professional development needs in my school. | 3.26 | .597 |

15. Data analysis helped me to identify areas of teaching/learning that need to be addressed in my school. | 3.33 | .599 |

*α = Cronbach’s alpha, M = Mean, SD = Standard Deviation

Table 3

Means and Standard Deviations of the Percentage of Regular Education Students Passing Reading and Mathematics TAKS

<table>
<thead>
<tr>
<th>Campus Level</th>
<th>Math</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Elem. School</td>
<td>248</td>
<td>83.10</td>
</tr>
<tr>
<td>Middle School</td>
<td>56</td>
<td>72.61</td>
</tr>
<tr>
<td>High School</td>
<td>70</td>
<td>54.46</td>
</tr>
<tr>
<td>Total</td>
<td>375</td>
<td>76.18</td>
</tr>
</tbody>
</table>

Structural Equation Model

The analysis employed a fully recursive SEM model, which tested principal data use constructs (latent variables of the three subscales of the Principal Data Use instrument) on student achievement. By estimating the most likely relationships between variables, the model was also modified by adding paths of statistical significance between the variables that made theoretical sense in order to improve the fit until a final best model was obtained. Model fit indices, including the comparative fit index (CFI) and the root means square error of approximation (RMSEA), were examined to determine how well the model fit the data. The results revealed a RMSEA of .048, while the CFI value was .97.

The RMSEA is a measure of the approximate fit in the population and is concerned with the discrepancy due to approximation (Steiger, 1990). The RMSEA is bound below by zero. According to Steiger (1990) and Browne and Cudeck (1993), a “close fit” is a RMSEA value less than or equal to .05. Further, Browne and Cudeck consider RMSEA values < .05 a good fit, values between .05 and .08 as an adequate fit, and values between .08 and .10 as a mediocre fit, whereas values > .10 were not acceptable. Although there is general agreement in the field that...
the value of RMSEA good model fit should be .05 or less, Hu and Bentler (1999) suggested an RMSEA cutoff value of less than .06 as an indication of good fit of the model to the data.

The CFI ranges from zero to one with higher values indicating better fit. A rule of thumb for the CFI index is that .97 or greater is indicative of good fit relative to the independence model, while values greater than .95 may be interpreted as an acceptable fit (Hu & Bentler, 1999).

The results of the final SEM model displayed in Figure 1 revealed that principals’ use of data to design teacher professional development had a statistically significant positive impact on student achievement (17.288, p < .01). Note: path parameter estimates measure the degree of effect produced by one variable on the arrow-pointed variable. In contrast, principals that used data to shape the vision had a statistically significant negative impact on student achievement (-11.879, p < .01). Interestingly, principals’ direct use of data in isolation without teacher collaboration to improve student achievement had no effect on the outcome variable (5.362, NS), net the effect of the remaining variables. Note that campus level and campus socio-economic status was negatively associated with student achievement. However, principals’ use of data to improve student achievement had a positive statistically significant impact on principals’ use of data to design teacher professional development, which indirectly impacted student achievement (.83, p < .01). The results indicate that principals using data to monitor student achievement in collaborations with teachers to design professional development is associated with increased student achievement. While the focus group discussions and evidence provided by principals regarding how principals use data were not clearly aligned with improving student achievement (i.e., using data that was a year behind and using formative assessments that were not psychometrically sound), the finding does support Young’s (2006) notion that shared leadership focused on data use affects teachers’ motivation for using data and “correspondingly loosens or tightens the connections between data-driven rhetoric and teachers” (p. ?) data practices. Teacher focus groups revealed that teachers on campuses where principals regularly analyzed data and discussed the results with teachers were more likely to teach the required content. While the data being analyzed by the principals may not have been statistically sound, the fact that teachers were aware that their results were monitored increased teacher urgency to ensure that students were learning. This awareness appeared to have a greater impact on teachers work in the classroom than did the application of the results derived from the principals’ analyses to the classroom setting.
In summary, teacher awareness that the principal is regularly monitoring classroom performance was positively associated with increased student achievement. However, the results of the principal focus groups and the SEM analysis revealed that principals do not have the requisite skills to properly analyze data and apply the results to the classroom. While one-shot professional development opportunities for principals are plentiful, which are often taught by individuals that generally do not have the requisite skills, the only logical place to ensure that principals are proficient in analyzing data and applying the results to the classroom setting is during the training program. In the era of accountability, university preparation programs must rethink how they are currently preparing principals and include data analysis courses that are taught by experts in the field. Proper data analysis and application of results coupled with teacher awareness could be a very powerful combination.

Discussion

The results of the current study indicated that principals often use data to improve student achievement, shape the vision of the campus, and design teacher professional development. However, the SEM analysis results revealed that the path from principals using data to shape the vision to student achievement was negative (-11.879, p < .01). A plausible explanation is that translating vision into reality can be difficult (Y. Simakis, 2006). This is especially true if the vision is not developed in collaboration with stakeholders as Young (2006) clearly points out.

Focus groups conducted in each of the districts with a randomly selected group of teachers representing the participating campuses further revealed that the vision was largely disconnected with the actual work taking place in the classroom. As one teacher stated, the vision was not an accurate representation of actual student learning. In each of the participating districts, formative assessments were developed at the district level and administered at least 3 times per year. However, the formative assessments were not often taught by teachers. Teachers indicated that the assessments were poorly designed.
accurate reflection of what was taught during the interim between assessments. Yet, principals continually used the data derived from the assessments to make instructional decisions.

According to Dervin’s Sense-Making Theory, information is used to bridge the gap between the situation and an outcome. However, the information used to bridge the gap in such a high-stakes environment should be accurate.

The results regarding principals’ using data to improve student achievement did not have a statistically significant direct effect on student achievement. Focus groups conducted among principals in each participating district revealed that principals were primarily reviewing prior-year test results, which can be considered “autopsy-type reports” and formative assessment results during the year with little or no teacher input. While reviewing past-year data is not necessarily wrong, it can lead to erroneous decisions given that the tests are normed at the grade-level and not linked from year-to-year. Further, after in-depth probing, it was determined that the formative assessments were not producing accurate results. More succinctly, the tests were not taken seriously by teachers or students due to the inadequacies of the formative assessments discussed earlier. Interestingly, principals were aware of the inadequacies of the formative assessments, but continued their use of the results of the assessments nonetheless. In short, principals were making decisions based on inaccurate data. As O’Day (2002) submits, “If principals are to ‘incorporate the information into their cognitive maps or repertoire of strategies, they must attend to it to ensure quality data and must have sufficient knowledge and ability to interpret it” (p. 299). The finding was consistent across campus principals from each district.

While principals’ using data to improve student achievement did not have a direct impact on student achievement, it did have an indirect affect on student achievement when practiced in conjunction with principals using data collaboratively to design teacher professional development (.83, p < .01). In addition, principals’ using data to design teacher professional development in collaboration with teachers had a positive statistically significant direct impact on student achievement (17.286, p < .01). Both teacher and principal focus groups from campuses that were led by principals who were collaborative in their leadership style and indicated a greater focus on data use affected teachers’ motivation for using data from multiple sources corresponding to loosened or tightened the connections between data-driven rhetoric and teachers’ data practices. The finding is in line with Young (2006) who suggested that both depth of activity and breadth of collaboration are important developmental considerations that school leaders can influence. It is apparent, based on the findings from the current study, that principals who make use of DDDM in a silo will have many challenges. The findings support the notion that DDDM must be practiced in collaboration with teachers and other stakeholders to have a positive impact on improving student achievement.

While Dervin’s (1992) Sense-Making Theory is relevant in the context of schools, the data that is used to bridge the gap between the situation and the outcome must be accurate and come from multiple sources. The qualitative (focus groups) and quantitative findings from the current study are important for educational leadership programs. Because the pre-service preparation of principals in assessment and data analysis has been weak or nonexistent, educational leadership programs must ensure that principals have the skills, preferably taught in the department of educational psychology, to construct assessments and analyze data prior to exiting the preparation program. Attempting to acquire the necessary skills after completing the preparation program in one-shot professional development sessions is no longer acceptable. This is especially important in the context of high-stakes testing and the requirements of NCLB (2001).
Based on the results of this study and reports calling for reform, the field of educational administration must rethink what we do to ensure that the work contributes to, rather than detracts from, quality preparation that is connected to practice. This endeavor will require that all levels within the field come together to seek a mutual and complex understanding of the context and the stakeholders that work within. Further, common ground must be found and shared goals developed around teaching principals to use scientifically-based research based on quality empirical data to change student academic behavior. Like many issues confronting our nation today, the challenges facing educational leadership are complex and interconnected. Challenges such as retooling our programs to ensure that principals have tools to properly analyze data must be approached in light of their complexities.

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Professional Learning Communities:  
Are Schools Ready to Collaborate to Educate?  

Rachel Hawkins, Waskom ISD  
Jason Mixon, Lamar University  

Introduction  

Every school in Texas has a common goal: students must pass the state-mandated test called the Texas Assessment of Knowledge and Skills (TAKS). With pressure from the state and federal government to raise achievement scores, schools are frantically searching for a program that will guarantee student success. Unfortunately, no program will be found because it is people, not programs, who make a difference in education.  

The authors selected a rural, elementary school, located in a small East Texas community that serves approximately 350 students: 21% African American, 21% Hispanic, and 58% White (Texas Education Agency, Academic Excellence Indicator System (AEIS) report, 2007-2008). Since 2002, this elementary school has earned the rating of Recognized seven times. Recognized recognition is accomplished when 80% of the students master the standardized tests. Each year, teachers and students work diligently to raise the campus to the next level, Exemplary. Exemplary recognition is accomplished when 90% of the students master the standardized tests. Like many schools in Texas, new programs are initiated with hopes of helping all students succeed, yet these programs are discarded quickly as something new promises better results. In the past five years, the teachers at this school have witnessed several program changes. After spending two years developing the Craine curriculum document, that curriculum was promptly set aside to make room for C-Scope, another curriculum document designed to help educators teach students at a higher level, thereby giving students the tools to be successful on TAKS.
Amidst all the programs, there must be an answer to better educate our students. That answer comes not in the form of a program but in a change of how the school community operates. Rather than working individually, the school must recognize the importance of every component and work collaboratively to educate all students. For more than a decade, a growing influence of research and practice has indicated that our best hope for success in schools is through the creation of professional learning communities (Blankstein, 2004). This idea does not cost money or require a program change. It does, however, necessitate a change in thinking.

**Research Questions**

This study aims to answer one fundamental question: (1) Are the characteristics of a professional learning community present at Elementary School A? Before responding to this question, an in-depth analysis of a professional learning community is essential.

**Review of Literature**

**Historical Background**

Rose (2008) noted that the American ideal of a free public education for all children has been a historic cornerstone of our public education system. The researcher found that the initial conception of our "common school," the goals of public education have included shaping the values of a diverse population in order to mold the landscape of democracy and American society. Horace Mann pronounced education as the equalizer for the masses (Tyack & Cuban, 1995). John Dewey advocated that education should be designed to advance intellectual and moral growth in our society (Dewey & Dewey, 1962). The architects of the American school system were ambitious, and many of those initial tenets and philosophical ideals have remained true. Light and Pillemer (1982) noted that the investment in education and the exchange of ideas and thoughts are educational building blocks in our quest for life, liberty and the pursuit of happiness.

As a cornerstone of American democracy, the educational community in the United Stated has experienced a litany of reform initiatives and models. Over the past twenty years, there have been intense efforts to restructure schools from a variety of disciplines (Zemelman, Daniels, & Hyde, 2005). Although these reform efforts were rooted in principles designed to improve education and the educational system, history shows that most of these reforms have been unable to change practice on a large scale, have left teacher knowledge and skills untouched, and have failed to yield long-term results in the classroom (Elmore, 2004; Fullan, 2005; Sparks, 2002).

**Current Trend**

According to Guthrie and Springer (2004), 21st century school reform is symbolized by the measurement of outcomes and highly structured accountability systems. This wave of reform has been prompted by the *No Child Left Behind* (NCLB) legislation. NCLB is a reauthorization by Congress of the 1965 Elementary and Secondary Education Act aimed at providing compensatory educational services primarily to help low income students. The significance of this legislation is the requirement that schools must make adequate yearly progress by ensuring that students perform at high levels of proficiency on achievement tests and that achievement gaps between advantaged and disadvantaged students are closed (Grider, 2008).

The last decade and a half of school improvement has led some schools to form professional learning communities to promote a collaborative approach to education. The current national trend of schools held accountable for a variety of student outcomes has many leaders bound to the belief that the most effective method for working within an atmosphere of
constant scrutiny, while maintaining focus directly on the students, has been for schools to create and maintain an environment of collaborative discourse and action (Sparks, 2003). Educators can impact instruction and learning by tapping into the collective wisdom found within the walls of schools and the hearts and minds of teachers. Roland Barth (2001) opined about how many children’s lives could be saved if we educators shared ideas with each other.

The Importance of Teachers

Ultimately, reform efforts to improve education have been slow to address the fundamental aspect of schooling – what happens in the classroom. Fullan and Hargreaves (1991) emphasized that change starts in the classroom with teachers and no matter how grandiose the reform proposals might be, change will not occur if teachers do not adopt them as their own.

Reform will not be achieved unless teachers are experts in their work, share their expertise, and seek to create new knowledge to sustain their work (Louis, Kruse, & Raywid, 1996). The only way to ensure that reform efforts are successful is to build a strong foundation of teacher knowledge, sustained by a commitment to structural change (Darling-Hammond, 1996).

The difficulty resides in determining how to build the foundation of teacher knowledge. Schmoker (2005) noted that teachers do not learn best from outside experts; they learn best from each other. In her research of effective schools as determined by reading and math achievement, Rosenholtz (1989) found that school climates were characterized by either isolation or collaboration. She also found that working in isolation, teachers had great autonomy with little oversight, classroom goals were individualistic, and discourse with colleagues rarely included instructional topics. The researcher noted in contrast, in effective schools, teachers’ work lives were places of intellectual sharing and collaborative planning characterized by cooperative and frequent communication with a focus on continuous improvement (Rosenholtz, 1985).

Examination of Professional Learning Communities

There has been overwhelming research (DuFour, DuFour, Eaker, & Karhanek, 2004) to support that professional learning communities attribute to higher achievement for all students. According to Marzano (2003), an analysis of research conducted over a thirty-five year period demonstrates that highly effective schools produce results that almost entirely overcome the effects of student backgrounds. The researcher also found in professional learning communities, all stakeholders play a role to support student success. To be most effective, teachers, students, administrators, and parents are vital to the programs and initiatives designed for the students. Although these environments are known to benefit the teacher professionally, the overall goal is to improve the academic performance of the students through the utilization of best teacher practices (Fovargue, 2008). The path to change in the classroom lies within and through professional learning communities (DuFour & Eaker, 1998).

The term ‘Professional Learning Community’ depicts three foundational pillars. ‘Professional’ refers to someone who has received advanced training in his or her position and is responsible to remain up to date in the changing knowledge base of one’s own field (DuFour & Eaker, 1998). ‘Learning,’ within this model, refers to an unwavering commitment to ongoing study coupled with unending questioning and curiosity. The term ‘community’ implies members connected by their interests (DuFour & Eaker, 1998). Richard DuFour (2007) emphasized that a school does not become a professional learning community by enrolling in a program; it becomes one by the persistence of the educators within it.
Implementing Professional Learning Communities

A review of the literature on collaborative efforts, systems, and results revealed several common themes and characteristics. Whole school reform, with external and complicated components rarely works (Darling-Hammond, 1997; Fullan cited in Sparks, 2003). Reform needs to be simple and less prescriptive (Schmoker, 2004). Schools need to promote creative thought and high levels of autonomy based on the needs of students (Hord, 1997). Researched best practices are most effective when teachers invent, adapt, and refine lessons in context according to the needs of the students (Hughes & Krisonis, 2006; Reeves, 2004; Wagner, 2004).

DuFour (2004) specified three core principles of professional learning communities: (a) ensuring that students learn, (b) a culture of collaboration, and (c) a focus on results. The core mission of education is not to make certain that students are taught, but rather to ensure that they learn (Rose, 2008). According to DuFour’s Professional Learning Community framework, all teachers must engage in conversation and exploration around three critical questions:

- What do we want our students to learn?
- How will we know when they have learned it?
- How will we respond when students experience difficulty?

In order to create a culture of collaboration, DuFour (2004) suggested schools need to create structures in which educators systematically analyze and improve classroom practice. Ongoing cycles of questions to promote deep levels of learning, leading to higher levels of achievement, are necessary (Rose, 2008). Schools need to make public what has traditionally been private; DuFour (2004) specified goals, strategies, materials, pacing, questions, concerns, and results as examples. Every educator needs to belong to a team which focuses on student learning. Time for teachers to meet during the workday throughout the year is crucial. Teams should develop norms or protocols to clarify the expectations of roles, responsibilities, and relationships among team members (Rose, 2008).

DuFour (2004) maintained that in order to attend to student results, educators should base their views of their effectiveness on the results of their students. He found that teams should be involved in an ongoing process which includes creating student-centered measurable goals and identifying the current student achievement levels through common, formative assessments that correspond to those goals. The data generated should be collected, analyzed, discussed, and ultimately, serve as a catalyst for improved teacher practice (DuFour, 2004).

The highest level of collaboration is defined as individuals working jointly to build a team of leaders and learners (Fullan, 1996). Schools who reach this stage have a school culture and climate where members can give quality feedback, share responsibility, spend time in critical dialogue, value collective knowledge, demonstrate consistent instructional practices, and honor all voices of the team (Richardson, 1998).

Summary of Literature Review

Even the grandest design eventually translates into hard work. The professional learning community model is a grand design – a powerful new way of working together that profoundly affects the practices of schooling (DuFour, 2004). However, initiating and sustaining the concept requires hard work. The school faculty must focus on learning rather than teaching, work collaboratively on matters related to learning, and hold itself accountable for the kind of results that fuel continual improvement. When educators do the hard work necessary to implement these principles, their collective ability to help all students learn will rise (DuFour, 2004).
Methodology

To answer the proposed research question, survey research was conducted utilizing a questionnaire to obtain quantitative data. The specific descriptive details of the study are as follows.

Selection of Participants

There are 25 professional educators employed at Elementary School A: Headstart – 1; Pre-K – 1; Kindergarten – 3; First Grade – 4; Second Grade – 3; Third Grade – 3; Fourth Grade – 4; Special Education – 2; ESL/Reading Recovery – 3; and Physical Education – 1. All 25 educators participated in the survey (23 female and 2 male). The racial composition of the participants is 92% White and 8% African-American. Approximately half of the participants (12) have one to five years of teaching experience, while 10 participants have over ten years of teaching experience. Salaries range from $28,320 for beginning teachers to $45,520 for teachers with over twenty years of educational experience.

Instrumentation

The questionnaire used in the study was developed by Huffman and Hipp (2003) titled Reculturing Schools as Professional Learning Communities. To maintain reliability, the questionnaire utilized a Likert scale: an instrument composed of statements that permit responses along an "agree . . . disagree" continuum (Mertler & Charles, 2008). There were 45 statements divided into 6 categories: Share and Supportive Leadership; Shared Values and Vision; Collective Learning and Application; Shared Personal Practice; Supportive Conditions – Relationships; and Supportive Conditions – Structures.

Data Collection Procedures

A team leader meeting was conducted after school with a representative from each grade level present. After providing team leaders with a memo defining professional learning communities and explaining the purpose of the questionnaire, team leaders were asked to provide each member of their team with a copy of the questionnaire. After completion, questionnaires were returned to the researcher by placing them in the office box. These procedures were in place to ensure accurate disclosure and confidentially: guiding principles of research to credibly obtain reliable information.

Data Analysis

Once all 25 questionnaires were returned, the researcher analyzed the descriptive data by calculating the average level of agreement and disagreement for each statement. Although participants were concerned with their minimal knowledge of a professional learning community, the results of the survey revealed Elementary School A has the foundation necessary for a professional learning community to be constructed. The bar graph (Fig. 1) below presents the overall findings of the data collected.
Presentation of Data

In the Shared and Supportive Leadership section of the questionnaire, all participants agreed with statements 4 and 9 (see Table 1). The highest level of disagreement (28%) was seen in statement 10 regarding the shared responsibility and accountability of stakeholders for student learning.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 (8%)</td>
<td>20 (80%)</td>
<td>3 (12%)</td>
<td></td>
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<tr>
<td>2</td>
<td>1 (4%)</td>
<td>19 (76%)</td>
<td>3 (12%)</td>
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<td>3</td>
<td>1 (4%)</td>
<td>22 (88%)</td>
<td>2 (8%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>22 (88%)</td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
<td>5 (20%)</td>
<td>19 (76%)</td>
<td>1 (4%)</td>
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</tr>
<tr>
<td>6</td>
<td>3 (8%)</td>
<td>19 (76%)</td>
<td>3 (12%)</td>
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<tr>
<td>7</td>
<td>1 (4%)</td>
<td>3 (8%)</td>
<td>20 (80%)</td>
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<tr>
<td>8</td>
<td>2 (8%)</td>
<td>20 (80%)</td>
<td>3 (12%)</td>
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<td>9</td>
<td>20 (80%)</td>
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<td></td>
<td></td>
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<tr>
<td>10</td>
<td>1 (4%)</td>
<td>6 (24%)</td>
<td>16 (64%)</td>
<td></td>
</tr>
</tbody>
</table>

Under the Shared Values and Vision category, all participants agreed (statements 4, 9, and 14) that the principal is proactive in addressing areas where support is needed and decision making is communicative and aligned. However, 52% of teachers surveyed disagreed with statement 16: school goals focus on student learning beyond test scores and grade (see Table 2.)
Table 2

Shared Values and Vision

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A collaborative process exists for developing a shared sense of values among staff.</td>
<td>2 (8%)</td>
<td>19 (76%)</td>
<td>4 (16%)</td>
<td></td>
</tr>
<tr>
<td>11 Shared values support norms of behavior that guide decisions about teaching and learning.</td>
<td>1 (4%)</td>
<td>19 (76%)</td>
<td>5 (20%)</td>
<td></td>
</tr>
<tr>
<td>The staff shares vision for school improvements that have an undervising focus on student learning.</td>
<td>1 (4%)</td>
<td>17 (63%)</td>
<td>7 (28%)</td>
<td></td>
</tr>
<tr>
<td>Decisions are made in alignment with the school’s values and vision.</td>
<td>20 (80%)</td>
<td></td>
<td>5 (20%)</td>
<td></td>
</tr>
<tr>
<td>15 A collaborative process exists for developing a shared vision among staff.</td>
<td>2 (8%)</td>
<td>18 (72%)</td>
<td>5 (20%)</td>
<td></td>
</tr>
<tr>
<td>School goals focus on student learning beyond test scores and grades.</td>
<td>12 (48%)</td>
<td>10 (40%)</td>
<td>2 (8%)</td>
<td></td>
</tr>
<tr>
<td>Policies and programs are aligned to the school’s vision.</td>
<td>1 (4%)</td>
<td>21 (84%)</td>
<td>3 (12%)</td>
<td></td>
</tr>
<tr>
<td>Stakeholders are actively involved in creating high expectations that serve to increase student achievement.</td>
<td>8 (32%)</td>
<td>16 (64%)</td>
<td>1 (4%)</td>
<td></td>
</tr>
</tbody>
</table>

The Collective Learning and Application portion of the questionnaire yielded the most positive results with 60% of participants selecting “agree” and 40% of participants selecting “strongly agree” to statement 26 (see Table 3). Teachers firmly believe the school staff is committed to programs that enhance learning. On the other hand, 36% of participants feel the school staff and other stakeholders are not working together to apply new knowledge and solve problems (statement 25).

Thirty-two percent of participants disagreed with statement 27 in the Shared Personal Practice section (see Table 4). Although teachers feel comfortable sharing ideas and working collaboratively with their peers, one-third of teachers believe there is little opportunity to observe their peers and offer encouragement.
All participants agreed with statement 33 under the Supportive Conditions – Relationships category (see Table 5). Obviously, caring relationships built on trust and respect, exist between teachers and students. Twenty-eight percent of participants disagreed with statement 36, which referred to a sustained and unified effort to embed change.

Table 5
Supportive Conditions - Relationships

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>18 (72%)</td>
<td></td>
<td></td>
<td>7 (28%)</td>
</tr>
<tr>
<td>34</td>
<td>1 (4%)</td>
<td>17 (68%)</td>
<td></td>
<td>7 (28%)</td>
</tr>
<tr>
<td>35</td>
<td>2 (8%)</td>
<td>16 (64%)</td>
<td></td>
<td>7 (28%)</td>
</tr>
<tr>
<td>36</td>
<td>7 (28%)</td>
<td>14 (56%)</td>
<td></td>
<td>4 (16%)</td>
</tr>
</tbody>
</table>

Implications and Recommendations

Although student success can be measured in a variety of ways, achievement test scores are typically the primary factor that determines whether or not a school is considered successful. Constantly, schools are bombarded with programs guaranteeing student success; however, individuals are quickly finding that new programs do not automatically equate high test scores.
Rather than spending more money to implement yet another “new and improved” program, this study placed a greater emphasis on the people already involved in the school. The researchers set out to answer the following question: (1) Does Elementary School A possess the qualities of a professional learning community? After a thorough analysis of the descriptive data collected, it is clear that Elementary School A is poised and ready to operate as a professional learning community.

Initially, numerous participants expressed that they were not familiar with the term “professional learning community.” Regardless of their prior knowledge, the results of the survey revealed an extremely high percentage of agreement with the overall components of the survey: approximately 88%. The majority of faculty members at Elementary School A believe that the school community works collaboratively to meet the unique needs of every child.

The researchers discovered two areas of concern. First, more than half of teachers surveyed (52%) disagreed with the following statement: “School goals focus on student learning beyond test scores and grades.” Apparently, a majority of teachers believe Elementary School A is primarily concerned with short-term achievement rather than long-term success. Secondly, 28% of participants expressed concern over the cleanliness and attractiveness of the school facility. A safe and positive school environment plays a large role in the effectiveness of a school.

Although Elementary School A is ready to “collaborate to educate,” the development of a true professional learning community will not happen automatically. The principal must take advantage of this fertile soil and plant the seeds of effective communication and collaboration. More time needs to be set aside for teachers to share ideas, discuss concerns, and solve problems collaboratively. Teachers must learn to work as a team, striving to meet the goals of the entire school. The Site-Based Decision-Making Committee needs to be restructured to accommodate greater parent and community involvement. With strong guidance and supportive leadership, Elementary School A has the potential to become a professional learning community dedicated to student success.

References


   Cambridge, MA: Harvard University Press.
